Mac OS X Server

Getting Started

Version 10.6 Snow Leopard

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Introducing Mac OS X Server

1

Mac OS X Server has everything you need to provide standards-based workgroup and Internet services, making it ideal for education, small businesses, and large enterprises.

Mac OS X Server version 10.6 Snow Leopard combines intuitively simple Macintosh ease of use with a mature, stable UNIX foundation. It provides an extensive array of services that support Macintosh, Windows, and UNIX client computers over a network.

With Snow Leopard Server, small organizations and workgroups without an IT department can take full advantage of the benefits of a server. Even a nontechnical user can set up and manage Snow Leopard Server for a group. Other users in the group can automatically configure their Macs to get services from Snow Leopard Server. Snow Leopard Server has advanced configuration options and management tools for IT professionals as well.

What's New in Snow Leopard Server

Mac OS X Server v10.6 Snow Leopard offers major enhancements in several key areas:

- 64-bit computing
- OpenCL
- Podcast Producer 2
- Wiki Server
- iCal Server 2
- Address Book Server
- Mail Server
- Mobile Access Server

64-Bit Operating System

To accommodate the enormous amounts of memory being added to today's servers, Snow Leopard Server has a 64-bit operating system to support up to a theoretical 16 TB of RAM. With more RAM, server applications can use more physical memory and consequently run faster. In addition, the 64-bit operating system dramatically improves the total number of simultaneous system processes, threads, and network connections that the server can use.

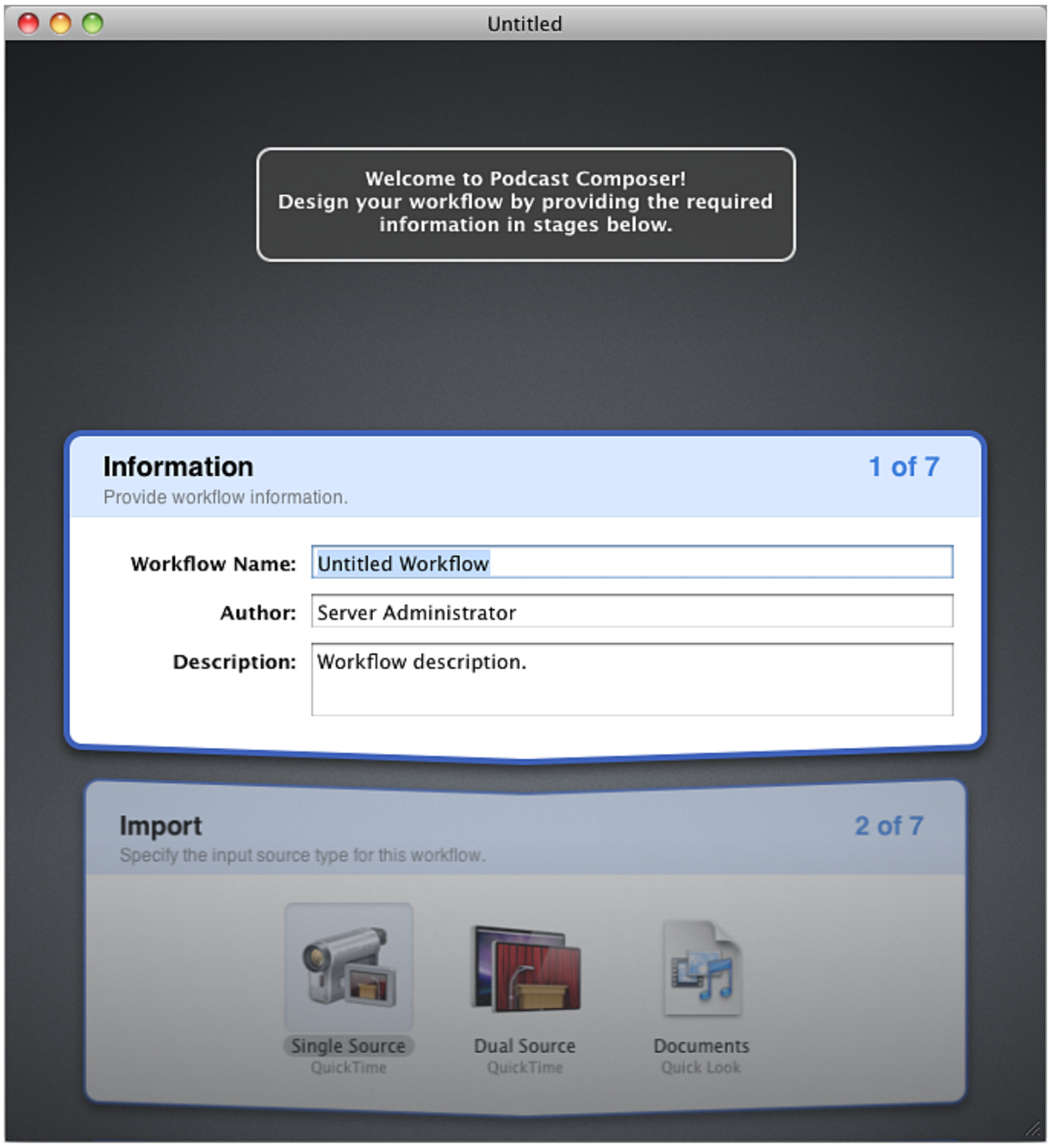
Snow Leopard Server supports the latest 64-bit technology on today's Xserve and Mac Pro systems while maintaining 32-bit support for other systems. On all systems, Mac OS X Server can run 64-bit and 32-bit applications concurrently, address large amounts of RAM, and access 64-bit file systems and math and image libraries.

OpenCL

OpenCL (Open Computing Language), allows developers to efficiently tap the vast gigaflops of computing power in the graphics processing unit (GPU). With GPUs approaching processing speeds of a trillion operations a second, they're capable of considerably more than just drawing pictures. Unlike other server operating systems, Mac OS X Server is specifically designed to use the GPU for graphics rendering, podcast effects and transitions, and drawing the user interface for Mac OS X Server itself. OpenCL lets developers apply GPU power in high-performance computing applications like genomics, video encoding, signal processing, and simulations of physical and financial models.

Podcast Producer 2

Podcast Producer 2 simplifies the process of recording content, encoding, and publishing high-quality podcasts for playback in iTunes and on iPod, iPhone, and Apple TV. Users control recording of lectures, training, presentations, or any other audio and video projects. Podcast Producer then automatically encodes and publishes the recording based on your workflow. With Snow Leopard and Snow Leopard Server, Podcast Producer 2 gains an easy-to-use graphical workflow editor, dual video recording, Podcast Library, a web-based application to control recording, and optional failover configuration for high availability.


Untitled
Welcome to Podcast Composer!
Design your workflow by providing the required information in stages below.
Information
1 of 7
Provide workflow information.
Workflow Name:
Untitled Workflow
Author:
Server Administrator
Description:
Workflow description.
Import
2 of 7
Specify the input source type for this workflow.
Single Source
QuickTime
Dual Source
QuickTime
Documents
Quick Look

The graphical workflow editor, Podcast Composer, leads you through the steps of defining video-based Podcast Producer workflows. You graphically choose the intro, title, and exit videos; specify different transitions and effects between videos; and view real-time titles and effects. You can add watermarks and overlays to your Podcast content. Your workflow also specifies encoding formats and targets distribution via wiki, iTunes U, or Podcast Library for your finished podcast.

Podcast Producer 2 lets users record dual video sources using the Podcast Capture application on a Mac or the new Podcast Capture web application on a Mac, iPhone, or Windows computer. Apple provides several picture-in-picture templates, or you can create your own.

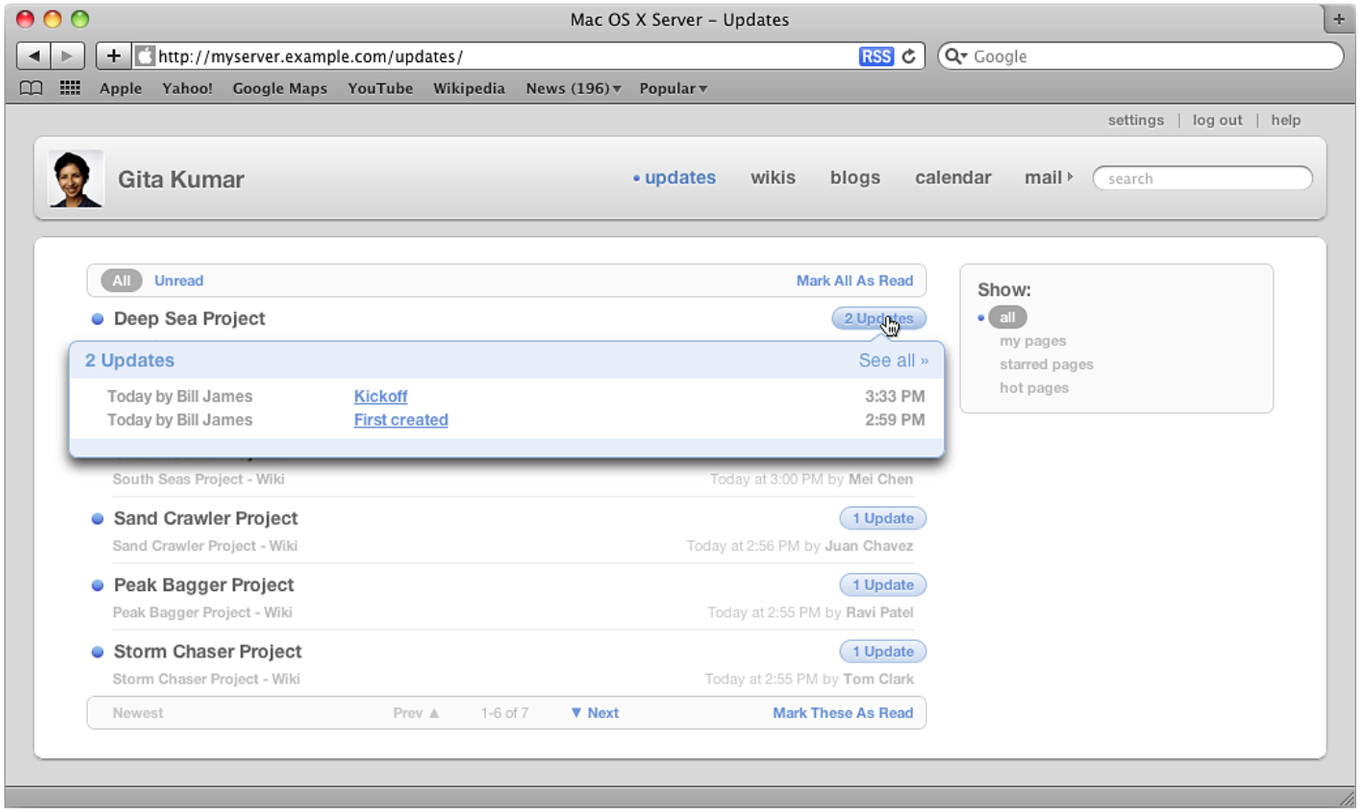
Podcast Library lets your server store podcasts and deliver them to viewers through RSS and Atom feeds. For example, your podcasts can feed directly from your server through iTunes U. Atom feeds simplify distributing multiple podcast versions, such as iPod, Apple TV, and audio only, because each Atom feed can contain multiple versions and the viewer's playback device automatically picks the best version.

Podcast Producer 2 and the services it relies on, including Xgrid, can be configured for high availability by setting up failover servers and using an Xsan file system.

Wiki Server 2

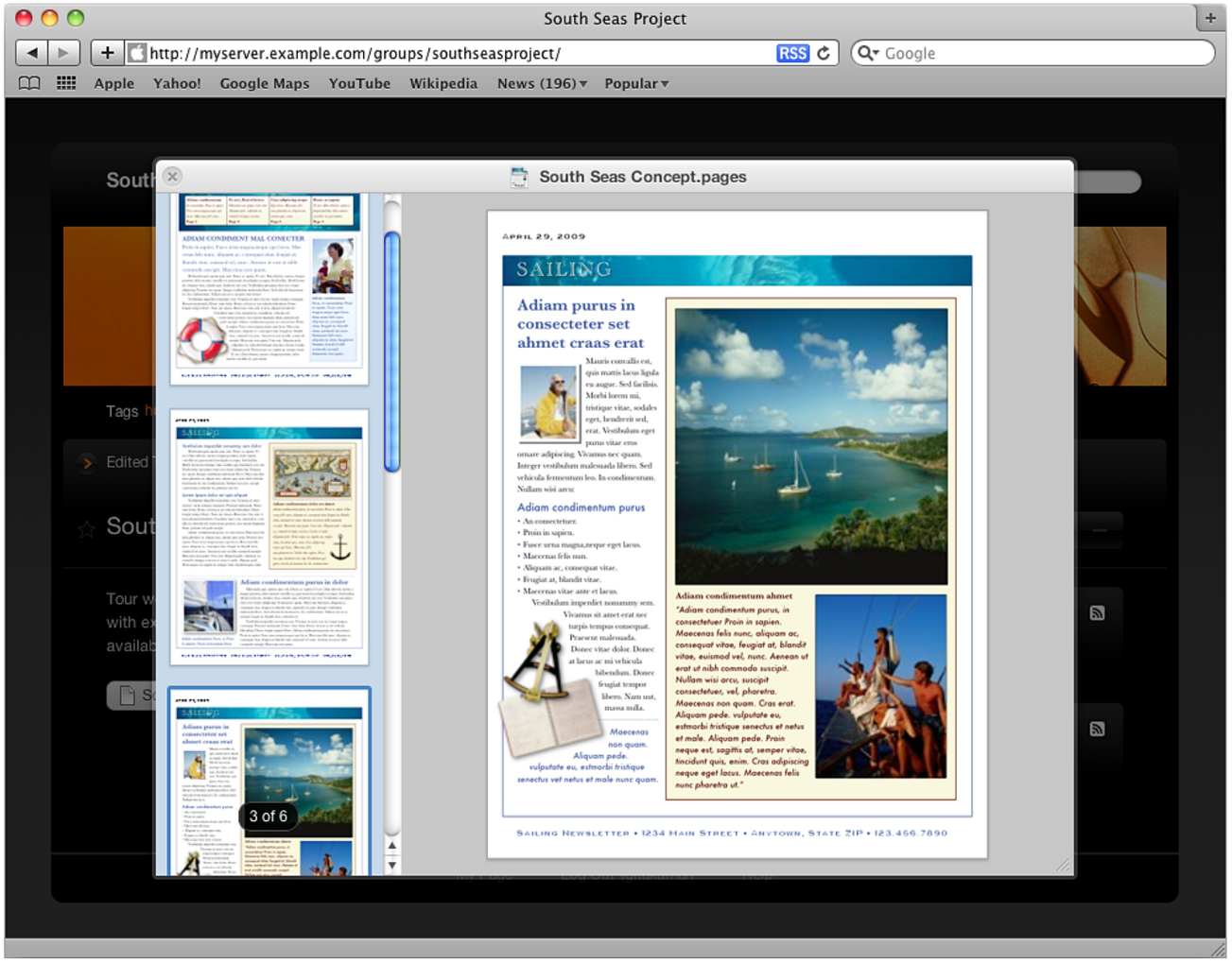
Mac OS X Server includes web services that make it easy for users to create and distribute information through shared wiki websites. Users can easily view, search, and edit wiki content in their web browsers. They can add, delete, edit, and format wiki content naturally—without knowing markup codes or special syntax. With a few clicks, they can attach files and images, publish to podcasts, assign keywords, and link to other wiki pages or other websites.

Snow Leopard Server provides each wiki user with a convenient wiki portal, called My Page, for viewing and creating wikis and blogs, using web calendars, tracking wiki updates, and accessing webmail.

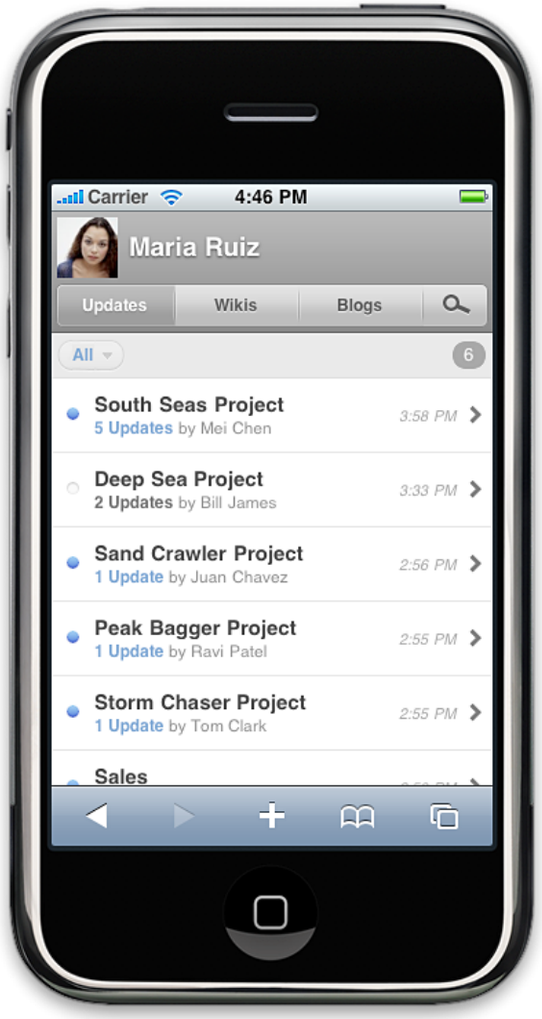


Mac OS X Server's single sign-on authentication means a user only needs to enter a name and password once to access all private wikis. Users don't need administrator passwords to create public and private wikis, and the creator of a private wiki controls access to it.

Users can search across multiple wikis. They can also see Quick Look previews of wiki attachments in the browser window, even if they don't have applications that open the attachments.



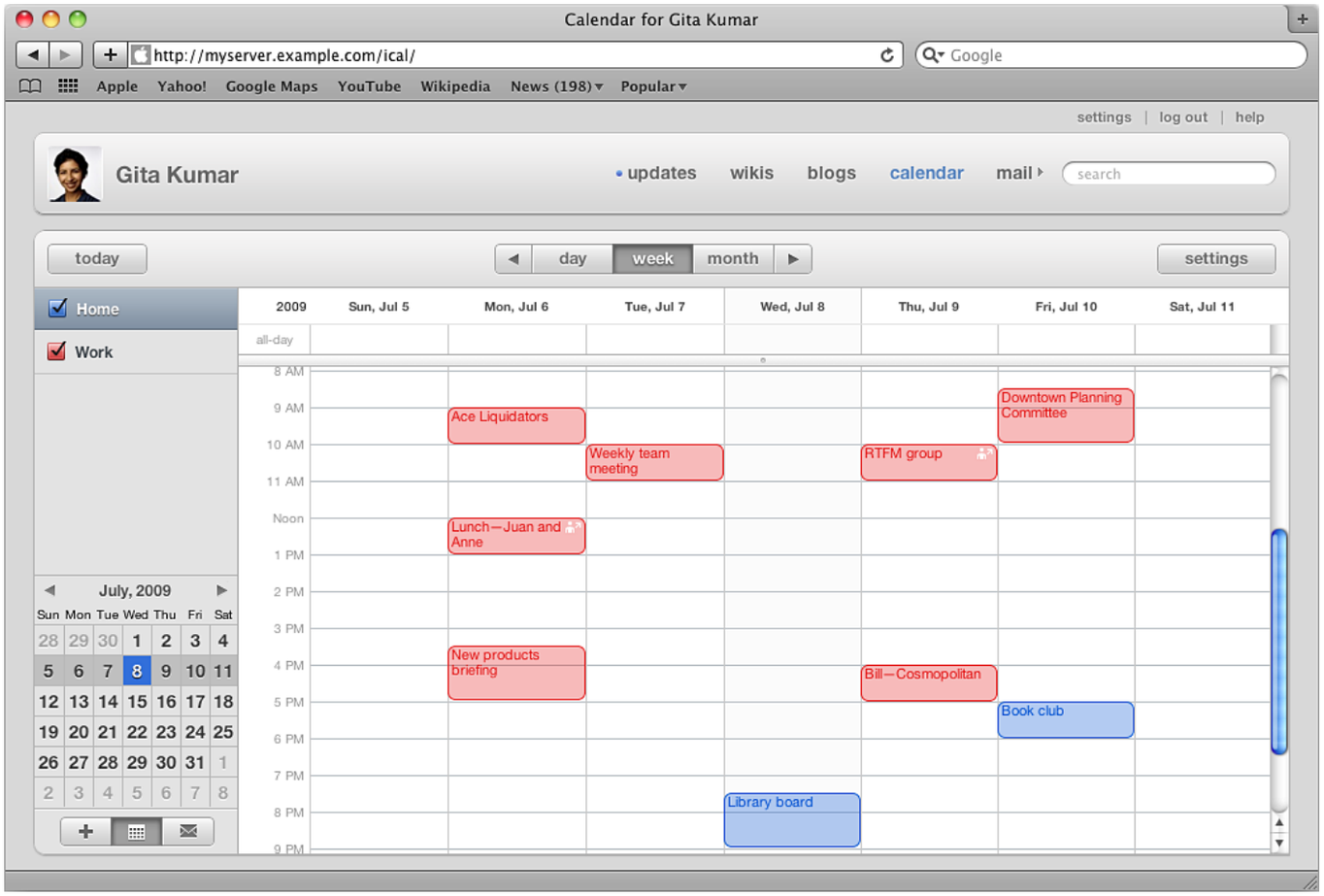
Snow Leopard Server also has new wiki and blog templates optimized for iPhone. Besides being better able to view wiki and blog pages, iPhone users can now track wiki page changes and add comments and tags.



When users create events in personal and group web calendars, Snow Leopard Server lets them invite other users and assists by looking up invitees and showing their availability. Snow Leopard Server also allows multiple calendars per user and per group.

iCal Server 2

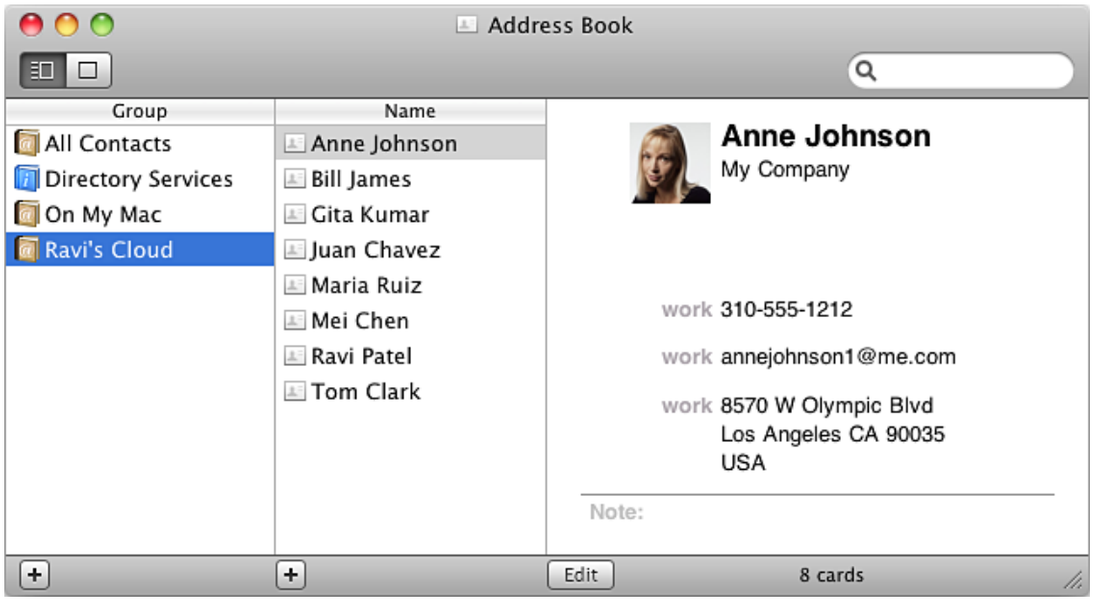
iCal Server makes it easy to share calendars, schedule meetings, and coordinate events within a workgroup, a small business, or a large organization. Colleagues can check each other's availability, propose and accept meetings, book conference rooms, reserve projectors, and more. iCal Server sends meeting invitations with agendas or to-do lists, and tabulates replies.



Snow Leopard Server adds push notifications, the ability to email event invitations to non–iCal Server users, integration with Calendar on iPhone, and a web application that lets users access their calendars from any computer with a web browser. iCal Server also integrates with the iCal application in Mac OS X and third-party calendar applications that support the standard CalDAV protocol.

Address Book Server

Snow Leopard Server introduces Address Book Server, which allows users to find contact information in an address book across multiple computers without the schema limitations and security issues associated with LDAP.



Users can view and add contact information in a server-based address book by using the Address Book application on any Mac with Snow Leopard. Address Book Server can also allow Snow Leopard users to find public contact information in directory servers that your server is connected to. Users of other computers can access address books on your server using third-party applications that are compatible with the CardDAV open standard.

Mail Server

Snow Leopard Server boosts its Mail Server performance, reliability, and scalability with a new, open standards–based engine designed to handle thousands of simultaneous connections. In addition, Mail Server is enhanced to include push email, server-side email rules, and vacation messages.

Mobile Access Server

Snow Leopard Server has a Mobile Access Server that can give mobile users secure access to your private services without inconvenient VPN connections. You specify whether users can access private mail, web, iCal, and address book services. Users connect to the reverse proxy Mobile Access Server on the Internet, and it makes secure connections on their behalf to services that Mac OS X Server provides on your private network.

Snow Leopard Server in Small Business

A single server with Mac OS X Server can provide all the services needed by computer users in a small business. The server and users' computers are all connected to a private local network that shares a DSL or cable Internet connection. The Internet connection can be shared through an AirPort Extreme Base Station (802.11n) or a Time Capsule, through a router from the Internet service provider (ISP) or computer retailer, or through the server. The next few pages illustrate and describe these configurations.

Single Server with AirPort Extreme

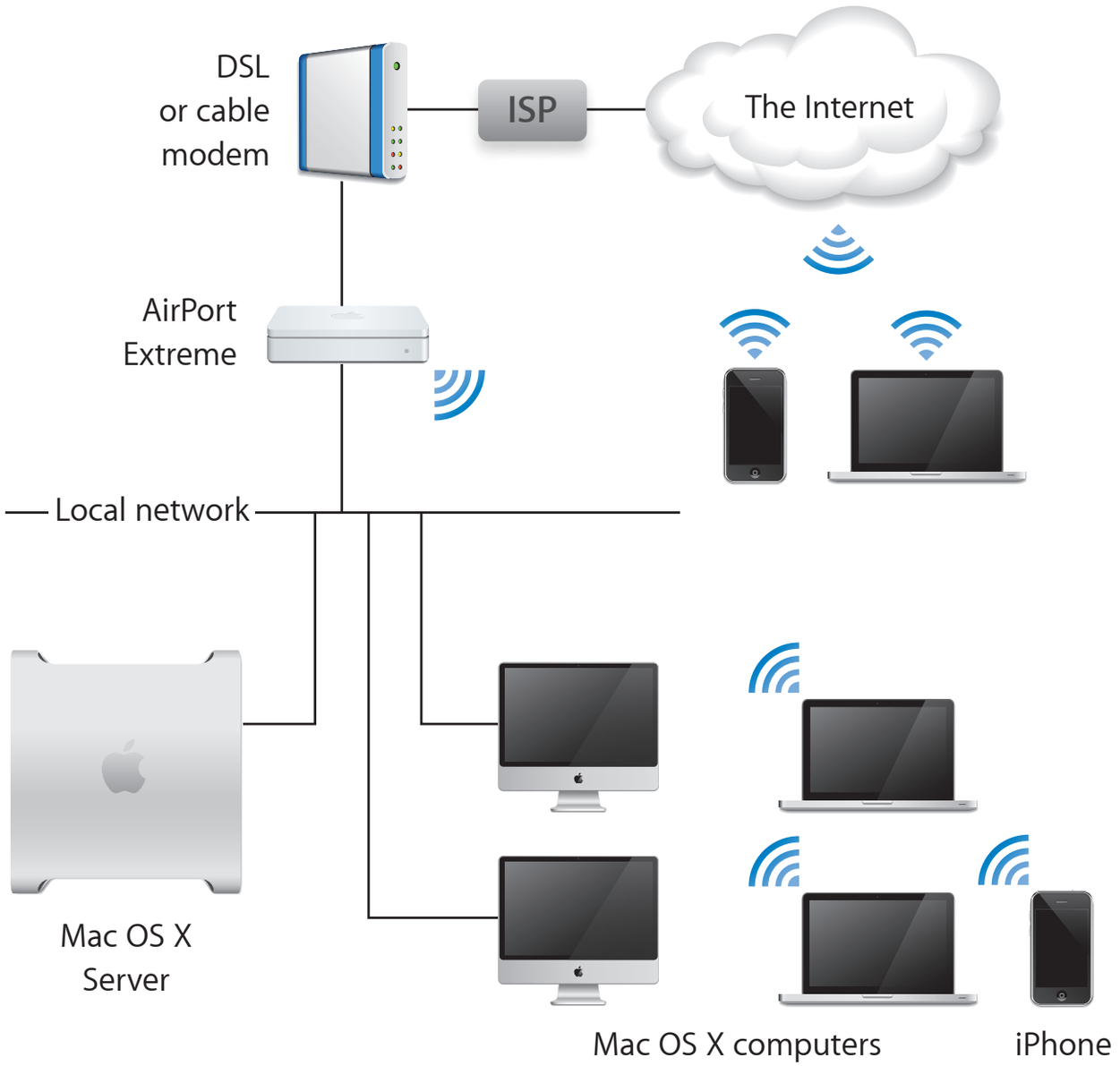
The following illustration shows Mac OS X Server and users' computers and iPhones sharing an Internet connection through an AirPort Extreme Base Station (802.11n).

The base station connects to the Internet through a DSL modem or cable modem and connects to the local network to share the Internet connection with the server and users' computers. The server and some of the users' computers have wired connections to the local network, and other users' computers connect to the local network wirelessly through the base station. The server and users' computers get their network addresses from the base station's DHCP server. They get DNS name service from the ISP.

The base station also protects the server and all users' computers against malicious attacks from the Internet by blocking communications that originate outside the local network. However, the base station is configured to allow incoming communications for some services. For example, the base station allows the server's mail service to receive email from outside the local network.

All the wired and wireless computers on the local network get services from Mac OS X Server.

The server provides user and group accounts, shared folders, server-based address books, shared calendars, instant messaging, and wikis with user portals, web calendars, and blogs. The ISP doesn't provide enough email addresses for everyone in the organization, so the server provides email addresses and mail service.



Users with Mac OS X Snow Leopard or Leopard use Time Machine to back up their Macs to an external hard drive (not shown) attached to the server.

Some users have their portable computers and home computers set up to connect to the server's VPN via the Internet. This gives them secure remote access, while traveling or working at home, to all the services that the server provides on the local network. iPhone users check wikis and blogs while they're roaming.

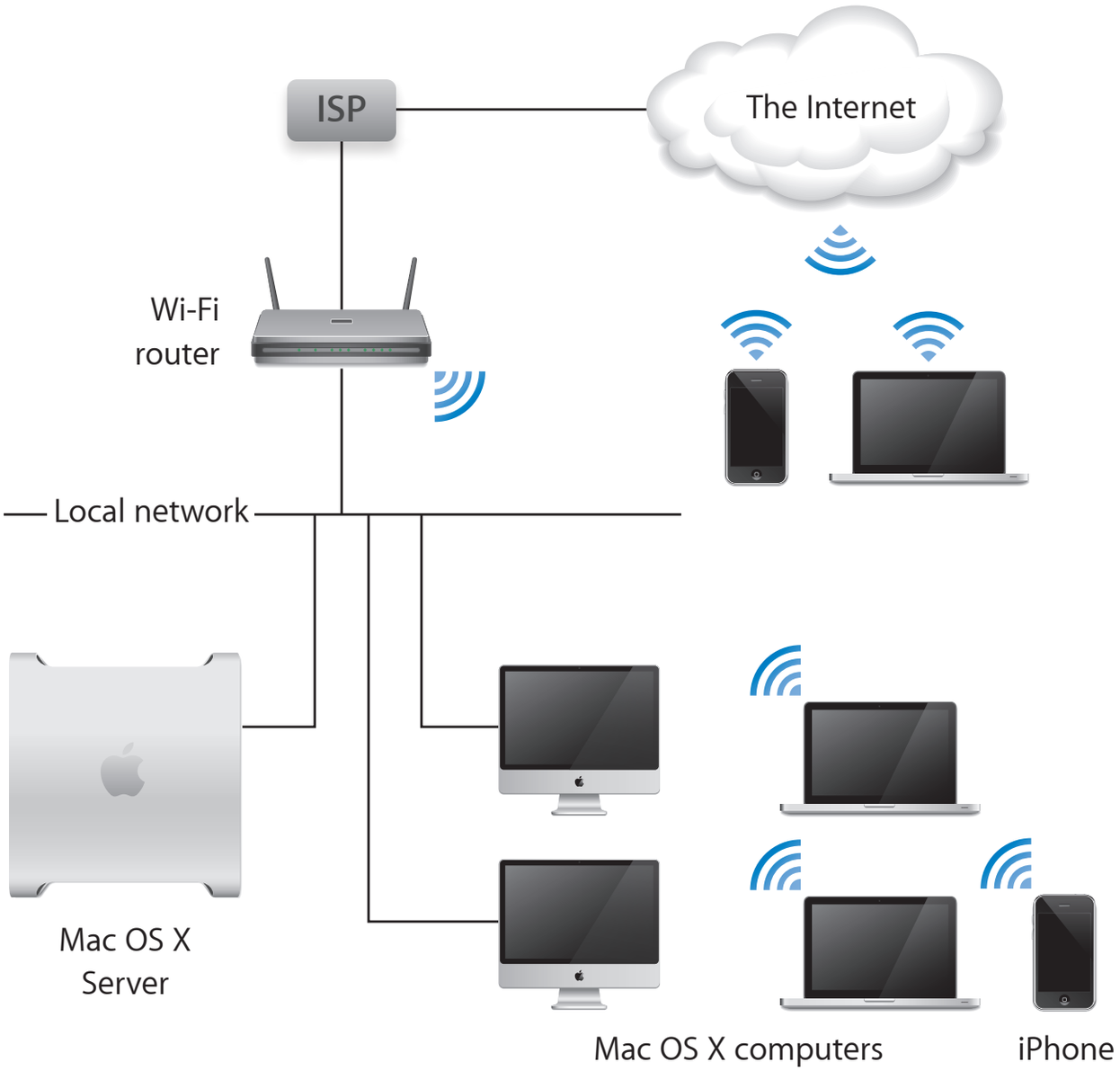
Single Server with a Network Router

The next illustration shows Mac OS X Server and users' computers and iPhones sharing an Internet connection through a wireless router from the ISP.

The wireless router in this configuration takes the place of the AirPort Extreme Base Station in the previous configuration. The wireless router has a built-in DSL or cable modem that connects to the Internet. The router has wired and wireless connections to the local network to provide Internet access to the server and users' computers and iPhones. The router includes a DHCP server that provides network addresses to the server and to the users' computers and iPhones.

In this configuration, the server's firewall blocks malicious attacks originating outside the local network. The firewall is configured to allow some services to receive incoming communications. For example, iChat service can receive instant messaging invitations from Google Talk users via the Internet.

Mac OS X Server provides services to all the wired and wireless computers on the local network. The server provides user and group accounts, shared folders, server-based address books, shared calendars, instant messaging, mail, and wikis with user portals, web calendars, and blogs. Users with Mac OS X Snow Leopard or Leopard use storage space on the server for Time Machine backups.



While away from the local network, users with mobile devices can check email, web calendars, wikis, and blogs via Wi-Fi hotspots in libraries, cafes, and airports.

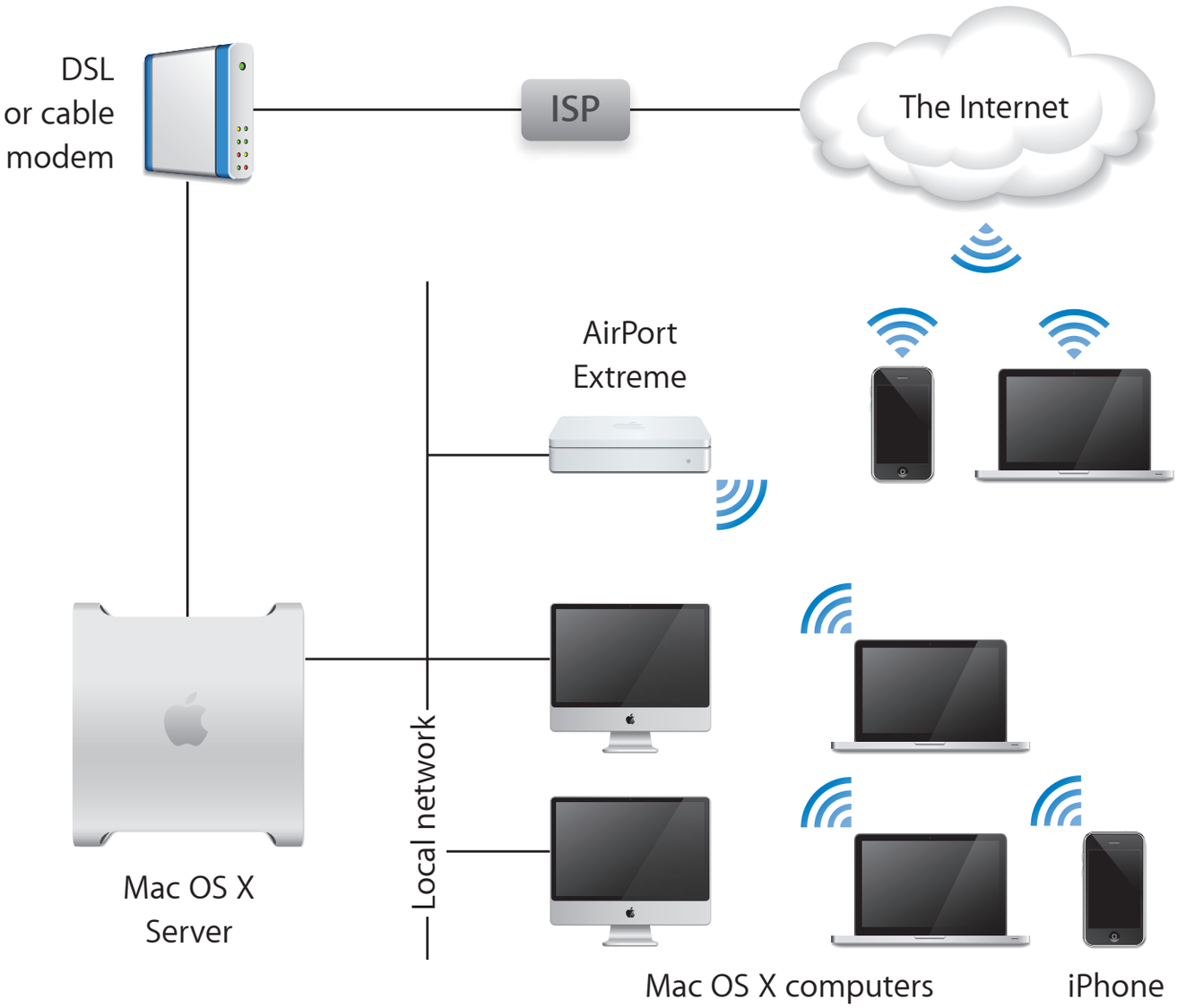
Single Server as an Internet gateway

The next illustration shows Mac OS X Server configured as an Internet gateway to provide Internet access to computers and mobile devices on the local network.

The server's primary Ethernet port connects through a DSL or cable modem to the Internet, and its other Ethernet port connects to the local network. The server's DHCP service provides network addresses to users' computers and mobile devices. Thus the server in this configuration does the job of the AirPort Extreme Base Station or generic router in the previous two configurations.

The server's firewall is configured to block malicious attacks from the Internet, but does allow incoming email and iChat invitations that originate outside the local network. Besides mail and iChat, the server also provides user and group accounts, shared folders, server-based address books, shared calendars, and wikis with user portals, web calendars, and blogs.

Users with Mac OS X Snow Leopard or Leopard use storage space on the server for Time Machine backups.



Snow Leopard Server in a Workgroup

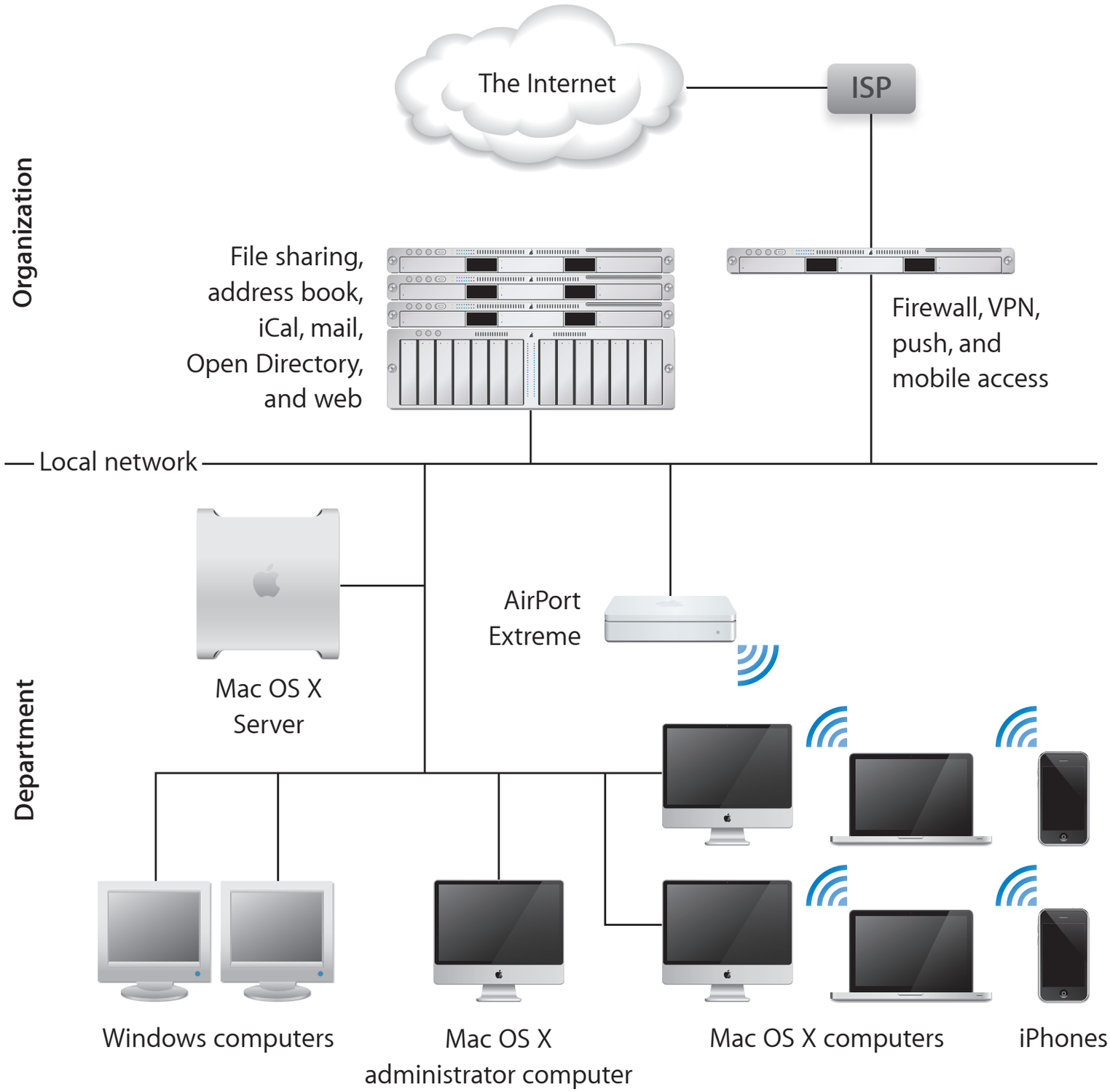
The next illustration shows a configuration of Mac OS X Server that serves a department in a large organization. This organization has an IT department that provides DHCP service for assigning network addresses, DNS name service, mail service, Internet access, and a VPN.

Everyone in the department already has a user account provided by the organization's Open Directory server, so these user accounts have been imported to the department's server. This means everyone simply uses the user name and password they already know to authenticate for services provided by the department's server. Those services were set up to use the Kerberos authentication of the Open Directory server, allowing users to log in once per session for all departmental services.

The department's server provides address book, calendar, and instant messaging services that work with the users' Mac OS X Address Book, iCal, and iChat applications. The department's server also provides shared folders and private wikis for groups and projects within the department. Some projects include participants from outside the department. Outside participants use their existing user accounts to authenticate for wiki or shared folder access.

The organization's servers provide storage for backup, but most users have Mac OS X Snow Leopard and prefer to use Time Machine with the external hard drive (not shown) attached to the department's server.

The department has some Windows users, who use Internet Explorer, Safari, and FireFox to access wikis, web calendars, and blogs. Shared folders appear as mapped drives in their Network Places. They have also set up their PCs to use the department server's Jabber instant messaging.


The Internet
ISP
Organization
File sharing, address book, iCal, mail, Open Directory, and web
Firewall, VPN, push, and mobile access
Local network
Mac OS X Server
AirPort Extreme
Department
Windows computers
Mac OS X administrator computer
Mac OS X computers
iPhones

Basic Applications and Utilities

After setting up Snow Leopard Server, you can manage users and groups, change essential service settings, and perform other basic server administration tasks using the applications and utilities described below. For information about using them, see the other chapters in this book.

Important: If you have versions of these applications and utilities from Mac OS X Server v10.5 Leopard or earlier, do not use them with Snow Leopard Server.

Applications and utilities for server administrators
iCal Server Utility (in /Applications/Server/) Create, edit, and delete the locations and resources that users can reserve when they schedule meetings in shared calendars hosted by iCal Server.
Server Assistant Set up Mac OS X Server for the first time. Install Mac OS X Server on a remote computer.
Server Preferences (in /Applications/Server/) Manage users and groups, customize services and system information, and monitor server activity.
Server Status widget for Dashboard Monitor server activity from any Mac with Snow Leopard.
System Preferences (in /Applications/) Connect your server to a directory server in your organization. Configure Time Machine backup of the server. Configure sharing for a directly connected USB or FireWire printer.

Advanced Tools and Applications

Besides Server Preferences and the other basic administration applications, Snow Leopard Server includes the advanced administration applications and tools described in the following table. For more information about these tools and applications, open Server Admin and then use the Help menu, or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/.

Important: If you have administration applications and tools from Mac OS X Server v10.5 Leopard or earlier, do not use them with Snow Leopard Server.

Advanced applications and tools for server administrators
Directory Utility Configure advanced connections to directory servers. Open Directory Utility by clicking Edit (or Join) in the Login Options section of the Accounts pane of System Preferences.
Podcast Capture (in /Applications/Utilities/) Record high-quality audio and video from a local or remote camera, capture screen activity, or upload QuickTime files into Podcast Producer for encoding and distribution.
Podcast Composer (in /Applications/Server/) Follow a structured, graphical process to create workflows that control how Podcast Producer generates and distributes podcasts.
QuickTime Broadcaster (in /Applications/) Capture live audio and video that works seamlessly with QuickTime Streaming Server for high-quality network broadcasting.
RAID Admin (in /Applications/Server/) Set up and monitor Xserve RAID hardware.

Advanced applications and tools for server administrators
Server Admin (in /Applications/Server/) Change advanced service settings, configure advanced services, and manage file share points. Monitor server activity and view detailed service logs.
Server Assistant Set up multiple servers automatically, using saved auto setup profiles. Open Server Assistant by using the Server menu in Server Admin.
Server Monitor (in /Applications/Server/) Remotely monitor and manage one or more Xserve systems.
System Image Utility (in /Applications/Server/) Create NetBoot and NetInstall images for Mac OS X and Mac OS X Server computers.
System Preferences (in /Applications/) Connect the server to a directory server in your organization.
Workgroup Manager (in /Applications/Server/) Manage users, groups, computers, and computer groups in advanced server deployments. Manage preferences for Mac OS X users.
Xgrid Admin (in /Applications/Server/) Remotely manage clusters, monitor controller and agent activity, and check job status on the grid.
Command-line tools Use UNIX tools to install and set up server software, administer services, manage users, and more.

Getting Ready for Mac OS X Server 2

Check the server hardware, set up your network, decide how to manage users and groups, decide which services to provide, and prepare server disks.

Before you install and set up Mac OS X Server, you need to:

- Make sure the computer you want to use as a server meets system requirements (page 30)
- Make sure your Internet connection and local network are ready for your server (page 31)
- Understand the ways you can manage users and groups, and decide which way is right for your circumstances (page 39)
- Learn about the services Mac OS X Server can provide, and decide which basic services you want to set up initially (page 42)
- Prepare disks for installing Mac OS X Server (page 49)
- If your server won't have a display, or won't be accessible, you can set up an administrator computer (page 51)

What You Need to Install Snow Leopard Server

To install Snow Leopard Server, you need a Macintosh desktop computer or server with:

- An Intel processor
- At least 2 gigabytes (GB) of random access memory (RAM)
- At least 10 gigabytes (GB) of disk space available

  Your server needs significantly more disk space—such as a high capacity external hard drive—if you want to allow Snow Leopard and Leopard users to back up their Macs on the server. A server needs even more disk space if you want to back up the server using Time Machine.

- An active connection to a secure network

  If you're an experienced system administrator, you can install and initially set up Snow Leopard Server without a network connection if, during setup, you select the option to configure manually and you don't create an Open Directory master or connect to an existing directory server during initial setup. The server will need a network connection when you set up its directory services.

Some Podcast encoding operations require a compatible graphics card.

Some features have additional system requirements or require additional purchases. For details, see the Mac OS X Server website at www.apple.com/server/macosx/.

Unless you have a site license, you need a unique serial number for each server. You must use a Mac OS X Server v10.6 Snow Leopard serial number, which begins with XSVR-106.

A built-in DVD drive is convenient for installing Mac OS X Server, but you can also attach an external FireWire DVD drive or a Mac that has a DVD drive and is operating in target disk mode.

A display is optional. You can use an administrator computer to install and administer Mac OS X Server on a computer that has no display. For information, see "Preparing an Administrator Computer" on page 51.

Your server doesn't need to be located where someone has constant access to it. When you need to perform administrative tasks, you can use any Mac that you've set up as an administrator computer.

Preparing Your Network and Internet Connection

Before installing and setting up Snow Leopard Server for the first time, you need to get DNS and DHCP services ready for your server. If you're setting up an independent server for a small organization, you'll also want to protect it against malicious attacks from the Internet.

Setting Up DNS for Your Server

To allow users to access your server by using its name, the domain name system (DNS) servers for your local network need to be configured to resolve your server's DNS name to its IP address. Some services provided by your server also require that DNS servers be configured to resolve your server's IP address to its primary DNS name.

Conditions that affect DNS setup

If users will only access your server from your local network

Your server can provide DNS service for your local network (IP subnet). This local DNS service is configured automatically during initial server setup if no existing DNS service can be found for your server. The local DNS service has an entry for the DNS name and IP address you specify for your server during initial setup.

In order for your clients to use the local DNS service that your server provides, you may need to configure this local DNS service and your DHCP server (usually your network router) after you finish initial server setup. If this applies to you, you'll find more information in the Mac OS X Server Next Steps document that's generated and placed on the server's desktop after initial setup.

If your server's local DNS service is all you need, you can skip to the next topic, "Setting Up DHCP for Your Server" on page 35.

If you don't have a domain name like example.com

You need a registered Internet domain like example.com if you want to allow Internet users to access services by name. You can purchase one through your ISP or from a public registrar of domain names. Ask the registrar to configure the domain to point to your server's IP address. For information about domain name registrars, search the web.

If your server doesn't have a registered DNS name like myserver.example.com

Work with your ISP, the IT department in your organization, or the public registrar where you obtained your domain to assign your server a meaningful DNS name. The server's DNS name is the basis for the addresses of all services that users get from the server, including email, iChat, iCal, address book, wiki, file sharing, blog, webmail, and VPN.

Conditions that affect DNS setup

If you're setting up a server for a small organization

Ask your ISP or the public registrar for your domain to add a DNS entry for your server's DNS name that resolves to your server's public IP address. Also ask for a reverse lookup entry that resolves the public IP address to the DNS name. Your ISP provides a public IP address as part of your Internet service.

For Internet users to be able to use your domain name to get services from your server, your domain name must always point to your server. You can ensure this by obtaining a static (fixed) IP public address for your server. If your ISP hasn't provided a static IP address, you can usually upgrade to one for a fee. If you don't have a static IP address, then your server's IP address may change, and Internet users may no longer be able to reach your server by name.

If you're setting up a server for a department or workgroup in a larger organization

Ask your IT department or DNS server administrator for a static (fixed) IP address for your server. Ask them to add a DNS entry for your server's DNS name that resolves to your server's public IP address, and also ask for a reverse lookup entry that resolves the public IP address to the DNS name. If your organization doesn't have its own DNS servers, add these entries through your ISP or with the public registrar for your domain.

Conditions that affect DNS setup

If your server will provide mail or web services

If your server will provide mail service or web services, you can provide easier access to them by requesting DNS entries for names like mail.example.com and www.example.com.

If your server will provide mail service, request an MX (mail exchanger) entry for your server. An MX entry (or record) allows users to have an email address like mchen@example.com. Without an MX entry, email addresses must include your server's full DNS name (for example, mchen@myserver.example.com).

If mobile users will access some services from the Internet

Your server's DNS name needs to be the same on your local network and on the Internet if you want to allow mobile users to access some services without using VPN. You need to obtain a registered Internet DNS name for your server as described above.

- *If you don't have a DNS server for your network,* Mac OS X Server will provide a minimal DNS service for your local network. This DNS service is set up automatically for the DNS name you enter and the private IP address you specify during server setup.
- *If your organization has a DNS server for your local network,* ask your IT department or DNS server administrator to add an entry that resolves your server's DNS name to your server's IP address on the local network, and also ask for a reverse lookup entry that resolves the IP address to the DNS name.

Private IP addresses begin with 192.168., 10., or 172.16. through 172.31.254. For example, 192.168.1.12, 10.0.1.12, and 172.16.1.12 are private IP addresses.

Setting Up DHCP for Your Server

Most users' computers are configured by default to get network addresses from a DHCP server on the local network. The DHCP server for your network needs to be configured to provide network addresses, including an IP address for each computer, the IP address of the router or gateway for your network, and IP addresses of one or two DNS servers for your network. If your DHCP server needs any configuration changes, you'll find information about them in the Mac OS X Server Next Steps document that's generated and placed on the server's desktop after initial setup.

Protecting a Small Network

If you have an AirPort Extreme Base Station (802.11n), a Time Capsule, a cable router, a DSL router, another network router, or a gateway that shares an Internet connection among computers on your local network, that device isolates your local network from the Internet. These Internet-sharing devices protect your local network against malicious attacks from the Internet by blocking communications that originate outside the local network. Computers on the Internet can't access your server unless you configure your AirPort Extreme Base Station, Time Capsule, router, or gateway to allow access to specific services.

Note: You can allow users with accounts on your server to get secure remote access to all its services via the Internet. After finishing initial server setup, use Server Preferences to turn on VPN service. For more information, see "Managing VPN Service" on page 145.

Protecting Your Network with AirPort Extreme

If you have an AirPort Extreme Base Station (802.11n) or a Time Capsule, Mac OS X Server can automatically manage it to protect your local network while allowing access to selected services from the Internet. After initial setup, you can use Server Preferences to specify individual services that you want to be accessible from outside your local network. Mac OS X Server will configure your AirPort Extreme Base Station or Time Capsule to allow incoming requests for those services to pass to your server.

Your AirPort Extreme Base Station or Time Capsule must have its Connection Sharing option set to "Share a public IP address" (that is, an Internet connection) in order for Mac OS X Server to manage it. In addition, the advanced option IPv6 Mode must be set to Tunnel.

You should also make sure the AirPort Extreme Base Station or Time Capsule has a secure password instead of the default password, which is *public*. You'll need to know the base station or Time Capsule password—not the wireless network password—to turn on automatic AirPort management.

Protecting Your Network with a Router

If you have a cable router, DSL router, or other network router configured as a NAT device, you can manually configure it to protect your local network while allowing access to selected services from the Internet. You configure your router to forward requests for individual services to your server. This process is called *port forwarding* or *port mapping,* because each service communicates through an abstract, numbered communication port. These ports are not physical like the Ethernet port on your computer.

You can manually configure port mapping on most Internet routers by using their configuration software. Usually the configuration software consists of several webpages. Using a web browser on any computer connected to your local network, you go to the webpage with settings for port mapping or port forwarding. In some cases, you can select standard services such as web or VPN and specify that each be mapped to your server's IP address. In other cases, you must enter port numbers for services and enter your server's IP address for each one.

For a list of services and the corresponding ports for which you might want to set up port mapping or forwarding, see "Services and Ports" on page 175.

Protecting Your Network by Making Your Server a Gateway

If you don't have an AirPort Base Station or other router, but your server has two Ethernet ports, you can make the server a gateway to share an Internet connection with other computers on your local network. The server's Ethernet ports must be configured as follows before you begin initial Mac OS X Server setup:

- One Ethernet port must have a public IP address on the Internet (not a private IP address like 10.0.0.1 or 192.168.1.1). This port is connected to your DSL modem, cable modem, or other Internet source. Usually, you use the server's first built-in Ethernet port for this.
- Another Ethernet port must be connected to a functional network switch or hub in your local private network. This Ethernet port must be unconfigured, have a manual IP address, or have a self-assigned IP address beginning with 169.254.

If this port has an IP address assigned by a DHCP server, you won't be able to make the server a gateway during initial Mac OS X Server setup. This is because, as a gateway, the server would provide DHCP service that might conflict with an existing DHCP server on the same network.

Other computers connected to this local network will share the server's Internet connection.

For Internet users to be able to use your domain name to get services from your server, your domain name must always point to your server. You can ensure this by obtaining a static (fixed) IP address for your server. If your ISP hasn't provided a static IP address, you can usually upgrade to one for a fee. If you don't have a static IP address, then your server's IP address may change, and Internet users may no longer be able to reach your server by name.

Setting up your server as a gateway does the following:

- Assigns the Ethernet port connected to the local network the private IP address 192.168.1.1.
- Turns on DHCP service and configures it to provide IP addresses 192.168.1.100 through 192.168.1.199 to computers on the local network. DHCP service assigns these addresses to computers whose Ethernet ports are configured with the "Using DHCP" option.

  You can also give users addresses 192.168.1.2 through 192.168.1.99, to use to configure their Ethernet ports with the "Using DCHP with manual address" option. Addresses 192.168.1.200 through 192.168.1.220 are reserved for your server's VPN service.
- Sets up NAT service to share the server's Internet connection with computers on the local network.

- Sets up the server's firewall to block incoming connections that originate from computers on the Internet. The firewall allows outgoing connections from computers on the local network. It also allows incoming connections that are responding to the local computers' outgoing connections. After setup, you can use the Security pane of Server Preferences to allow incoming requests through the firewall for specific services.
- Sets up DNS service for the local network, and configures it to cache DNS name lookups to improve performance for local network computers.

Deciding How to Manage Users and Groups

During the initial setup of Mac OS X Server, you'll choose how the server manages the user and group accounts it uses to authenticate users and determine which services they're allowed to access. You can choose to:

- Manage users and groups independently for a small organization
- Import users and groups for a workgroup in a medium or large organization
- Configure manually for a server that provides selected services to a medium or large organization

Managing Your Own Users and Groups

If you're setting up a server for a small organization without an existing directory server, you can choose to set up an independent server with its own users and groups. The server provides its own directory service, as an Open Directory master, for its user and group accounts.

After setup, you'll manage users and groups, configure basic service settings, and monitor server status with the easy-to-use Server Preferences application. You can also use the Server Admin and Workgroup Manager applications if you need to change advanced settings or set up advanced services.

Importing Users and Groups for a Workgroup

If you're setting up a server for a department or workgroup in an organization with an existing directory server, you can choose to import users from that directory server. This allows people to use your server with their existing user names and passwords. You'll need to know the following information:

- The directory server's DNS name or IP address
- Whether you need to authenticate to the directory server, and if so, the type of directory server and the name and password of a user account on the directory server
  - *For an Open Directory server,* you can use a standard user account; you don't need a directory administrator account.
  - *For an Active Directory server,* you can use an Active Directory administrator account or a standard user account that has the "Add workstations to domain" privilege.

Your server uses the account name, password, and other attributes that already exist in imported user accounts. Your server can augment the existing attributes with attributes needed for its services. For example, imported users can be members of a group you create on your server.

Your server will also provide its own directory service as an Open Directory master, and thus can have its own user and group accounts. After setup, you can create groups for teams or projects within the workgroup, and you can create a user account for anyone who doesn't have one from the organization's directory server.

After setup, you'll manage users and groups, configure basic service settings, and monitor server status with the easy-to-use Server Preferences application. You can also use the Server Admin Workgroup Manager applications if you need to change advanced settings or set up advanced services.

Configuring Manually

If you're an experienced system administrator setting up one or more servers for a medium or large organization, and you need complete control of service configuration, you can choose to configure manually. This choice accommodates a wide variety of business needs.

During initial setup, you'll be able to bind your server to a directory server or make your server a directory server by creating an Open Directory master. You can also choose to configure directory services after initial setup.

After initial setup, you can configure services and manage users by using either advanced applications such as Server Admin and Workgroup Manager or command-line tools. You can also use the Server Preferences application if you only need to configure basic service settings and manage basic user and group settings.

Deciding Which Basic Services to Provide

During the initial setup of Mac OS X Server, you can select which basic services your server will initially provide to users: address book, iCal, file sharing, iChat, mail, and web. For information to help you decide which of these services to provide, see the next six topics.

You'll configure basic services after initial setup, along with other services, if during initial server setup you choose to configure manually, don't connect to a directory server, and don't create an Open Directory master.

For information about the services you can configure after initial setup, see "Providing More Services" on page 46.

Address Book Service Overview

The address book service for Mac OS X Server, Address Book Server, allows users to find contact information in a server-based address book across multiple computers without the schema limitations and security issues associated with LDAP. Users can view and add contact information in a server-based address book by using the Address Book application on any Mac with Snow Leopard. Address Book Server can also allow Snow Leopard users to find public contact information in directory servers that your server is connected to. Users of other computers can access address books on your server using third-party applications that are compatible with the CardDAV open standard.

File Sharing Service Overview

Mac OS X Server file sharing service lets your group members access shared folders and store personal files on the server. They can use Macintosh, Windows, or UNIX computers to access their files and shared folders without special software, using native file protocols including AFP and SMB. Windows users see Mac OS X Server file servers in their Network Places, just like Windows file servers.

iCal Service Overview

The calendar service for Mac OS X Server, iCal Server, makes it easy for users to share calendars, schedule meetings, and coordinate events within a workgroup, a small business, or a large organization. Colleagues can quickly and easily check each other's availability, set up and propose meetings, book conference rooms, reserve projectors, and more. iCal Server sends the invitations, which can include information such as an agenda or to-do list, and tabulates replies.

iCal Server works with the iCal application in Mac OS X v10.6 Snow Leopard, Calendar on iPhone, web calendars in Snow Leopard Server wikis, and third-party calendar applications that support the standard CalDAV protocol.

iChat Service Overview

iChat service provides instant messaging (IM) for Macintosh, Windows, and Linux users. Team members can brainstorm solutions, make plans, exchange URLs, or transfer files, without worrying about outsiders intercepting confidential information. Instant messaging service provides text messaging between users or among multiple users. It also facilitates direct connections between users for audio, video, and multiway audio and video sessions.

iChat service works with the iChat application in Mac OS X, Google Talk, and other instant messaging software that uses the XMPP protocol, called *Jabber*.

Mail Service Overview

Mail service lets users send and receive email on your local network and the Internet, using any email application. Mail service includes filters that protect users from junk mail and viruses. Mail service works with the Mail application in Mac OS X, Mail on iPhone, and other popular mail applications that use the standard IMAP, POP, and SMTP email protocols.

Web Services Overview

Web services can provide wiki, blogs, web calendars, web access to email, and custom websites.

If web services are on, everyone with a user account on the server gets a convenient wiki portal, called My Page, for viewing and creating wikis and blogs, using web calendars, tracking wiki updates, and accessing webmail.

All users can easily create wikis and control who can view, search, and edit their wiki content. By using included templates or creating their own, users can add, delete, edit, and format content naturally—without knowing markup codes or special syntax. With a few clicks, or by dragging and dropping, they can attach files and images, publish podcasts, assign keywords, and link to other wiki pages or other websites. They can also review the wiki's complete history of changes and revert any page to a previous version.

Web calendars let people keep track of appointments, meetings, and other events using any web browser. Users can send and receive invitations to events. When inviting people to an event, users can see each person's availability on a timeline. Each user's My Page portal includes a personal web calendar, and each wiki can also have a calendar that everyone who has access to the wiki can use. Users can create multiple calendars on their personal web calendars and on wiki group calendars that they have access to. Users with Snow Leopard can also use the iCal application to view, change, and create events that appear in web calendars.

Blogs give nontechnical users a way to keep their colleagues up-to-date with projects, files they're working on, and pictures or podcasts. Users publish their own blogs with drag-and-drop ease, using a selection of built-in professional templates.

With webmail, users can receive and send mail from a web browser anywhere on the Internet. They can access all their email as if they were using Mac OS X Mail or another mail application on their computers.

Web services also let you publish custom websites that you have created (or someone has created for you) using website development software. You can restrict access to each website to a particular group, or restrict parts of the website to particular groups. You can also specify each website's IP address, an access port, and the folder where website files are stored on the server. A custom website is also called a *virtual host*.

Providing More Services

Whether you set up basic services during initial server setup or not, you can configure them and many others after setup. You can change basic service and system settings and add users and groups with Server Preferences. You can change advanced settings and configure advanced services with Server Admin. You can use Workgroup Manager to change advanced user and group settings, control user preferences, and manage computer records.

The next two tables show what you can configure with Server Preferences, Workgroup Manager, and Server Admin. The tables also show what you can have automatically configured during initial server setup.

For information about using Server Preferences, first see Chapter 5, "Managing Your Server," through Chapter 10, "Managing Server Information." For additional information, open Server Preferences and then use the Help menu.

For information about using Server Admin or Workgroup Manager, open the application and then use the Help menu.

Service	Initial server setup	Server Preferences	Workgroup Manager
Basic user and group management	No	Yes	Yes
Advanced user and group management	No	No	Yes

Service	Initial server setup	Server Preferences	Workgroup Manager
Computer account and computer group management	No	No	Yes
Managed preferences	No	No	Yes

Service	Initial server setup	Server Preferences	Server Admin
Address book	Optional	Yes	Yes
DHCP, DNS, NAT	Automatic	No	Yes
File sharing (AFP and SMB protocols)	Optional	Yes	Yes
File sharing (FTP and NFS protocols)	No	No	Yes
Firewall (application firewall)	Automatic	Use System Preferences	Use System Preferences
Firewall (IP firewall)	Automatic	Yes	Yes
Gateway (NAT, DNS, DHCP)	Optional	No	Yes
iCal (calendar sharing, event scheduling)	Optional	Yes	Yes
iChat (instant messaging)	Optional	Yes	Yes
Mail with spam and virus filtering	Optional	Yes	Yes
Mobile access	No	No	Yes

Service	Initial server setup	Server Preferences	Server Admin
MySQL	No	No	Yes
NetBoot and NetInstall (system imaging)	No	No	Yes
Network time	Automatic	No	Yes
Network management (SNMP)	No	No	Yes
NFS	No	No	Yes
Open Directory master (user accounts and other data)	Optional	Optional	Yes
Podcast Producer	No	No	Yes
Print	No	No	Yes
Push notification	Automatic	Automatic	Yes
QuickTime Streaming	No	No	Yes
RADIUS	No	No	Yes
Remote login (SSH)	Optional	Use System Preferences	Yes
Software update	No	No	Yes
Time Machine backup of users' Macs	Optional	Yes	Yes
Time Machine backup of server	No	Use System Preferences	Use System Preferences

Service	Initial server setup	Server Preferences	Server Admin
VPN (secure remote access)	No	Yes	Yes
Web (wikis, blogs, webmail)	Optional	Yes	Yes
Xgrid (computational clustering)	No	No	Yes

Preparing Disks for Mac OS X Server

If you're going to install Mac OS X Server on an existing computer and want a clean installation, you need to erase the disk you'll install on. You can use the Disk Utility application before installing locally or use Server Assistant while installing remotely.

If the server has multiple disks that you want to erase and format, or if you want to partition the server's disk into multiple volumes or set up a RAID set, you can use Disk Utility before installing.

Note: The Installer won't erase the disk for you before it installs Snow Leopard Server. If you don't want to upgrade Mac OS X Server on an existing server, be sure to use Disk Utility to erase the disk before installing.

Erasing with Disk Utility

You can erase disks and partition hard drives with Disk Utility while installing Mac OS X Server locally. You open Disk Utility by choosing it from the Utilities menu of the Installer. You can erase the startup disk using these formats:

Mac OS Extended (Journaled): This is recommended and is the most common format for a Mac OS X Server startup volume.

Mac OS Extended (Case-sensitive, Journaled): This is worth considering if you are planning to have your server host a custom website with static web content instead of or in addition to wikis. A case-sensitive disk can host static web content with a more direct mapping between files and URLs.

You can erase other disks using the formats above or a non-journaled variant: Mac OS Extended or Mac OS Extended (Case-sensitive).

If the server has a disk formatted using the UNIX File System (UFS) format by an earlier version of Mac OS X or Mac OS X Server, do not use the UFS disk for a Mac OS X Server startup disk.

Erasing with Server Assistant

If you're using Server Assistant to install Mac OS X Server remotely, and the target disk already has Mac OS X Server or Mac OS X installed, Server Assistant can erase the disk using the Mac OS Extended (Journaled) format only.

Partitioning a Hard Disk

Partitioning the hard disk creates a volume for server system software and one or more additional volumes for data and other software. The volume you install the server system software on should be at least 20 GB. This volume should be larger if you plan to store shared folders, wikis, and other service data on it. Use Disk Utility to partition a hard disk.

Creating a RAID Set

If you're installing Snow Leopard Server on a computer with multiple internal hard disk drives, you can create a RAID (Redundant Array of Independent Disks) set to optimize storage capacity, improve performance, and increase reliability in case of a disk failure. For example, a mirrored RAID set increases reliability by writing your data to two or more disks at once. If one disk fails, your server automatically continues using other disks in the RAID set.

You can set up RAID mirroring or another type of RAID set when you begin installing Mac OS X Server, by choosing Disk Utility from the Installer's Utilities menu. You can also set up RAID mirroring after installing on a disk that isn't partitioned, by opening Disk Utility (in /Applications/Utilities). To prevent data loss, you should set up RAID mirroring as soon as possible. For information about setting up a RAID set, open Disk Utility and then use the Help menu.

Preparing an Administrator Computer

You can use an administrator computer to install and set up Mac OS X Server on another computer over the network. The remote server doesn't need a display.

As illustrated below, you start up the server using the *Mac OS X Server Install Disc* and then use Server Assistant on the administrator computer to perform a remote installation and setup.

Server Assistant | Administrator computer | Target server with DVD drive

You can also use an administrator computer to manage the server remotely after setup.

You make a computer with Mac OS X v10.6 into an administrator computer by installing server administration software on it. If you have another server with Mac OS X Server v10.6 already set up, you can use it as an administrator computer as well.

To set up an administrator computer:

1. Make sure the Mac OS X computer has Mac OS X v10.6 Snow Leopard installed.
2. Insert the Mac OS X Server *Administration Tools* disc.
3. Open the Installers folder.
4. Double-click ServerAdministrationSoftware.mpkg to open the Installer, and then follow the onscreen instructions.

For information about using an administrator computer, see "Installing Remotely" on page 57, "Setting Up a Server Remotely" on page 65, and "Connecting Server Preferences to a Remote Server" on page 77.

Installing Mac OS X Server

3

Use the Installer to install Snow Leopard locally, or use Server Admin to install remotely.

Before installing Mac OS X Server, be sure to prepare the computer you're going to use as a server and get your network and Internet connection ready. Also, use the *Installation & Setup Worksheet* to collect information you'll need. (It's in the Documentation folder on the *Mac OS X Server Install Disc*.) For more information about these preparations, see the previous chapter.

You can install Mac OS X Server v10.6 Snow Leopard using one of these methods:

- Install locally if the target server has a display and keyboard that you can use conveniently
- Install remotely if the target server is inconveniently located or doesn't have a display

For information about other installation methods, such as upgrading an existing server or migrating an existing server to a new computer with Snow Leopard Server, open Server Admin (in /Applications/Server/) and then use the Help menu, or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/.

Installing Mac OS X Server Securely

When you start up a computer from the *Mac OS X Server Install Disc,* SSH remote login service and VNC screen sharing service start automatically in order to make remote installation possible.

Important: Make sure the network is secure before you install or reinstall Mac OS X Server, because SSH and VNC give others access to the computer over the network.

For example, set up your local network so that only users you trust can access it. Avoid having Ethernet jacks in public places. If you have an AirPort Base Station or other wireless access point, configure it to use WPA2 authentication (also called RSN) with a strong password. Consider making the wireless network name private. Also, try to keep the server's hardware serial number confidential, because it's used as the password for remote installation and setup.

Installing Locally

You can install Mac OS X Server directly onto a computer by starting up the computer from the *Mac OS X Server Install Disc*. The Installer application guides you through the interactive installation process. The computer must have a display attached so you can interact with the Installer. When you install locally, you can use Disk Utility and other applications in the Installer's Utilities menu, and you can customize the installation by selecting items to be installed.

You can perform:

- A new installation of Mac OS X Server on a disk that doesn't already have Mac OS X Server or Mac OS X installed
- A clean installation, which installs Mac OS X Server after erasing and formatting a target disk
- An upgrade of a server with an Intel processor and Mac OS X Server v10.5 Leopard or Mac OS X Server v10.4.11 Tiger (for information about other upgrading and migrating options, open Server Admin and then use the Help menu, or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/)

To install Mac OS X Server locally:

1. If you're planning to erase or partition the target disk, make sure you have a backup of the disk.
2. Start up the computer, log in if necessary, and insert the *Mac OS X Server Install Disc* into the DVD drive.
3. Open the Install Mac OS X Server application and click the Restart button.

   The application is in the Mac OS X Server Install Disc window.

   If you see an Install button instead of a Restart button in the lower-right corner of the application window, click Install and proceed through the Installer panes by following the onscreen instructions (skip steps 4 through 8 below). When installation is complete, restart the server. Server Assistant opens so you can set up the server. For information, see "Setting Up a Server Locally" on page 63.
4. After the computer restarts, choose the language you want to use on the server, and then click the arrow button.
5. Read the information about Mac OS X Server, use the Utilities menu if necessary, and then click Continue.
   - *If you need to erase the target disk before installing,* choose Utilities > Disk Utility. You can also use Disk Utility to partition the server's hard disk or create a RAID set. For more information, see "Erasing with Disk Utility" on page 49.

     Note: The Installer won't erase the disk for you before it installs Snow Leopard Server. If you don't want to upgrade Mac OS X Server on an existing server, be sure to use Disk Utility to erase the disk before installing.
   - *If you want to restore from a Time Machine backup of Mac OS X Server,* choose Utilities > Restore System From Backup.

6 Read and agree to the software license agreement.

7 Select the disk or volume (partition) you want to install on, and make sure it's in the expected state before clicking Install to begin installing.

If you want to select the language translations, printer drivers, and other optional items that will be installed, click Customize.

You can quit installation before it begins by using the Mac OS X Installer menu.

8 After installation is complete, the computer restarts and Server Assistant opens so you can set up the server.

For information, see "Setting Up a Server Locally" on page 63.

Installing Remotely

Using Server Admin and Server Assistant on an administrator computer, you can install Mac OS X Server on another computer over the network. The computer you're installing on doesn't need a display, but it does need a DVD drive for the *Mac OS X Server Install Disc*. If the computer doesn't have a built-in DVD drive, you can attach an external FireWire DVD drive or a Mac that has a DVD drive and is operating in target disk mode.

You can perform:

- A new installation of Mac OS X Server on a disk that doesn't already have Mac OS X Server or Mac OS X installed
- A clean installation, which installs Mac OS X Server after erasing and formatting a target disk

- An upgrade of a server with an Intel processor and Mac OS X Server v10.5 Leopard or Mac OS X Server v10.4.11 Tiger (for information about other upgrading and migrating options, open Server Admin and then use the Help menu, or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/

To install Mac OS X Server remotely:

1. If you're planning to erase the target disk or partition, make sure you have a backup of it, and optionally use Disk Utility to prepare the target disk.

   If you only need to erase the target disk using the most common format, Mac OS Extended (Journaled), you don't need to use Disk Utility. With Disk Utility, you can erase the target disk using other formats, partition the server's hard disk, or create a RAID set. For information about using Disk Utility for these tasks, see "Erasing with Disk Utility" on page 49.

2. Start up the target server with the *Mac OS X Server Install Disc*.

   If the target server has a built-in DVD drive, insert the disc and then restart the computer while holding down the C key on the keyboard. Release the C key when you see the Apple logo.

   If the target server has an external FireWire DVD drive, restart the computer while holding down the Option key, select the icon representing the *Mac OS X Server Install Disc,* and then click the Arrow button.

3. On an administrator computer, open Server Admin and select "Ready for Install" in the list on the left.

   Server Admin is located in /Applications/Server/.

If Server Admin asks for a password to connect to a server that's already set up on your network, you can click Cancel. You don't need an administrator account to install Mac OS X Server remotely.

4 Select the target server on the right, and then click Install.

If the server you want isn't listed, you can click the Refresh (curved arrow) button to have Server Admin look again for servers that are ready for installation on your local network.

If the server you want is on a different local network, choose Server > Install Remote Server.

5 When Server Assistant opens, confirm the target server's address, enter the first 8 characters of the server's built-in hardware serial number as a password, and click Continue.

If the Address field is blank or incorrect, enter the server's DNS name or its IP address in IPv4 format (for example, 192.0.2.200).

For servers that Server Assistant finds on the local network (IP subnet), an IP address may be assigned automatically by a DHCP server on the network. If no DHCP server exists, the target server uses a 169.254.xxx.xxx address unique among servers on the local network. Later, when you set up the server, you can change the IP address.

To find the serial number, look for a label on the server. Match the capitalization of the serial number when you type it.

For an Xserve with Intel processor that has had its main logic board replaced and has no hardware serial number, enter "System S" (don't enter the quotation marks) as the password. For another computer that has no built-in hardware serial number, use 12345678 as the password.

6 Select the language you want Mac OS X Server to use and click Continue.

The language you select doesn't affect the language on users' computers.

7 Select a destination disk or volume (partition) and click Install.

8 If the volume you selected already has Mac OS X Server or Mac OS X installed, select an available option and then click OK.

The options may include:

Erase: Completely erases the destination volume before installing a new copy of Mac OS X Server.

Upgrade: This option is available only if the destination volume has Mac OS X Server v10.5 Leopard or Mac OS X Server v10.4.11 Tiger. You can upgrade this volume to Snow Leopard Server without erasing the destination volume. For information about upgrading and migrating, open Server Admin and then use the Help menu, or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/.

9 After installation is complete, the target server restarts and you can click More Options to set up the server remotely or to install Mac OS X Server on another computer.

10 If you clicked More Options, choose what you want to do with Server Assistant now.

Install Mac OS X Server remotely: Repeat this procedure, skipping steps 3 and 4.

Set up Mac OS X Server remotely: For instructions, see "Setting Up a Server Remotely" on page 65.

Prepare and save information for automatic setup: Lets you go through the setup process, selecting setup options and entering setup data, and then instead of using the setup information to configure a server right now, save the setup information as an auto setup profile on a removable drive or disc. Later you can use the saved auto setup profile to automate the setup of one or more servers. For more information, see the *Installation & Setup Worksheet*. (It's in the Documentation folder on the *Mac OS X Server Install Disc*.)

Instead of using Server Assistant on an administrator computer, you can remotely control installation by using screen sharing on a Mac with Mac OS X v10.5 Leopard or Mac OS X v10.6 Snow Leopard, or by using Apple Remote Desktop (which you can purchase separately) on another Mac. For information, open Server Admin and then use the Help menu, and visit the Apple Remote Desktop website at www.apple.com/remotedesktop/.

Setting Up Mac OS X Server

4

Server Assistant leads you through setting up your server for the first time.

Server Assistant opens automatically when you:

- Finish installing Mac OS X Server v10.6 Snow Leopard
- Start up a new server with Snow Leopard Server preinstalled

You can use Server Assistant:

- Locally on the server
- Remotely on an administrator computer to set up the server over an Ethernet network

For information about automatically setting up a server using a saved auto setup profile or setting up multiple remote servers, see the *Installation & Setup Worksheet*. (It's in the Documentation folder on the *Mac OS X Server Install Disc*.)

Setting Up a Server Locally

You can set up a new server or a computer with Mac OS X Server newly installed, by using the server's keyboard, mouse, and display.

To set up a server locally:

1. Prepare for setup by filling out a printed copy of the *Installation & Setup Worksheet*.

   The *Installation & Setup Worksheet* is located in the Documentation folder on the *Mac OS X Server Install Disc*. For more information, see Chapter 2, "Getting Ready for Mac OS X Server," on page 29.

2. If you have DHCP or DNS service provided by your ISP, Internet router, or other servers on your network, make sure they are set up for your new server and are running.

   For information about how DHCP, DNS, and other network services should be set up, see "Preparing Your Network and Internet Connection" on page 31.

3. Make sure your server has an active connection to a secure network.

   This network connection is needed to set up the server's directory services. If you're an experienced system administrator, you can set up the server without a network connection if, during setup, you select the option to configure manually and don't create an Open Directory master or connect to an existing directory server during initial setup.

   If your server will connect to a wireless network, you'll configure the connection during setup.

4. If you want to set up your server as an Internet gateway so other computers on your network can share the server's Internet connection, verify the following:

   - One Ethernet port, or interface, connects to your DSL modem, cable modem, or other Internet source. The Internet interface must have a public IP address (not a private IP address like 10.0.1.1 or 192.168.1.1). The public IP address must be static (fixed) so users can access the server by its DNS name—for example, to use the server's VPN service.

- Another Ethernet port connects to your local network.

During setup, Server Assistant automatically identifies which port connects to the Internet.

For more information, see "Protecting Your Network by Making Your Server a Gateway" on page 37.

5 If the server is off, turn it on.

When the server starts up, Server Assistant opens automatically.

6 Proceed through the Server Assistant panes, following the onscreen instructions and entering the information you've recorded on the *Installation & Setup Worksheet*.

For information about settings in a Server Assistant pane, click the Help button in the pane.

7 After server setup is complete, you can take some additional steps to enhance the security, accessibility, and usefulness of your new server. For information, see "After Setting Up a Server" on page 69.

Setting Up a Server Remotely

If you have a new server or a computer with Mac OS X Server newly installed, you can set it up over the network by using Server Admin and Server Assistant on an administrator computer. The server you're setting up doesn't need a display. For information about administrator computers, see "Preparing an Administrator Computer" on page 51. For information about setting up multiple servers remotely, open Server Admin and then use the Help menu.

To set up a remote server:

1. Prepare for setup by filling out a printed copy of the *Installation & Setup Worksheet*.

   The *Installation & Setup Worksheet* is located in the Documentation folder on the *Mac OS X Server Install Disc*.

2. If you have DHCP or DNS service provided by your ISP, Internet router, or other servers on your network, make sure they are set up for your new server and are running.

   For information about how DHCP, DNS, and other network services should be set up, see "Preparing Your Network and Internet Connection" on page 31.

3. Make sure your server has an active connection to a secure Ethernet network.

4. If you want to set up your server as an Internet gateway, so other computers on your network can share the server's Internet connection, verify the following:

   - One Ethernet port, or interface, connects to your DSL modem, cable modem, or other Internet source. The Internet interface must have a public IP address (not a private IP address like 10.0.1.1 or 192.168.1.1). The public IP address must be static (fixed) so users' computers can access the server via the Internet, for example to use the server's VPN service.
   - Another Ethernet port connects to your local network.

   During setup, Server Assistant automatically identifies which port connects to the Internet.

   For more information, see "Protecting Your Network by Making Your Server a Gateway" on page 37.

5. If the server is off, turn it on.

When the server starts up, Server Assistant opens automatically and waits for remote setup to begin.

6 On an administrator computer, open Server Admin and select "Ready for Setup" in the list on the left.

Server Admin is located in /Applications/Server/.

If Server Admin asks for a password to connect to a server that's already set up on your network, you can click Cancel. You don't need an administrator account to set up Mac OS X Server remotely.

7 Select the target server on the right, and then click Set Up.

Server Admin identifies unconfigured servers by name, IP address, and MAC address. The name may be generated from the computer model and the MAC address.

If the server you want isn't listed, you can click the Refresh (curved arrow) button to have Server Admin look again for servers that are ready for setup on your local network.

If the server you want is on a different local network, choose Server > Set Up Remote Server.

8 When Server Assistant opens, do one of the following, depending on the status of the server you want to set up:

- *If the server is listed as "Authentication required,"* select it, click Authenticate, and enter its password.
- *If server you want isn't listed, click Add,* enter the server's DNS name or its IP address in IPv4 format (for example, 192.0.2.200), and enter its password.

The password for a new installation of Mac OS X Server is the first 8 characters of the server's built-in hardware serial number. To find the serial number, look for a label on the server. Match the capitalization of the serial number when you type it. For an Intel-based Xserve that has had its main logic board replaced and has no hardware serial number, enter "System S" (don't enter the quotation marks) as the password. For a computer that has no built-in hardware serial number, use 12345678 as the password.

The password for an upgraded server is the password of the server's root user.

9 Click Continue and proceed through the Server Assistant panes, following the onscreen instructions and entering the information you've recorded on the *Installation & Setup Worksheet*.

For information about settings in a Server Assistant pane, click the Help button in the pane.

10 After server setup is complete, Server Assistant presents three options:

Set Up Another Server: Go back to step 1 and set up another server for the first time. (Because Server Assistant is already open, you can skip steps 6 and 7.)

Configure: Open Server Preferences on the computer you used to set up the remote server. Then you can open a new connection to the remote server and set up users and groups, customize services and system information, or monitor server activity. For information about these tasks, see "Connecting Server Preferences to a Remote Server" on page 77 and Chapter 5, "Managing Your Server," through Chapter 10, "Managing Server Information."

Share Screen: Begin a screen sharing session with the server you just set up. When asked to authenticate, use the name and password of the administrator account you created on that server.

After server setup is complete, you can take some additional steps to enhance the security, accessibility, and overall usefulness of your new server. For information, see "After Setting Up a Server", next.

After Setting Up a Server

After setting up a server, you can:

- Enhance the security, accessibility, and usefulness of your new server by following the advice in the Mac OS X Server Next Steps document that's generated and placed on the server's desktop after initial setup.
- Take a few steps to keep the server secure. For information, see the next two topics, "Keeping Your Server Secure" and "Protecting the System Administrator (root) Account".
- If your organization has an Open Directory server, Active Directory server, or other directory server that you didn't connect (bind) your new server to during initial setup, you can connect it now. For instructions, see "Connecting Your Server to a Directory Server" on page 71.
- Use Software Update to install any available Mac OS X Server updates. For information, see "Keeping Snow Leopard Server Up to Date" on page 79.
- Configure an AirPort Base Station or an Internet router to protect your network while allowing users to access selected services over the Internet. For information, see "Protecting Your Network with AirPort Extreme" on page 36 and "Protecting Your Network with a Router" on page 36.

- If you set up a single server for a small organization or a server for a workgroup in a medium or large organization, use Server Preferences to set up users and groups, customize services and system information, and monitor server activity. For information about these tasks, see Chapter 5, "Managing Your Server," through Chapter 10, "Managing Server Information," or open Server Preferences and then use the Help menu.

  You can also use the Server Status widget with Dashboard to monitor your server. For information, see "Using the Server Status Widget" on page 75.

- Change advanced settings, configure advanced services, change advanced user and group settings, and manage users' computers with Server Admin, Workgroup Manager, other Mac OS X applications, or UNIX command-line tools. For information about these applications and tools, open the application and then use the Help menu, or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/.

Keeping Your Server Secure

For security, you should create a standard user account after completing server setup. When you log in on the server, routinely use this standard account instead of an administrator account. Then use your administrator account with each application that requires administrator privileges. For example, use your administrator name and password with Server Preferences when you need to manage users, groups, or services.

To create a standard user account, use the Accounts pane of System Preferences on the server. For information, open System Preferences and then use the Help menu.

Protecting the System Administrator (root) Account

The administrator password you enter during setup is also used for the server's System Administrator user account, whose short name is root. The System Administrator (root) account can be used to move or delete any file in the system, including system files not available to a server administrator account or any other user account. You don't need root user privileges to administer your server.

Important: Protecting the root user password is very important, so it should not be the same as another account's password. After setting up the server, you should change the password of the root user account.

To change the root user's password, open the Accounts pane of System Preferences, select Login Options, click the Edit button, click Open Directory Utility, and then choose Edit > Change Root Password. If you don't see an Edit button in Login Options, but do see a Join button, click the Join button, click Open Directory Utility, and then choose Edit > Change Root Password.

You can also change the root user's password by opening Terminal (in /Applications/Utilities/) and then entering `sudo passwd root`.

Connecting Your Server to a Directory Server

If your server can have its own users and groups, you can also set up your server to import user accounts from an Open Directory server or Active Directory server in your organization. To be able to import user accounts, your server must be connected to the directory server. Imported user accounts have access to the same services as user accounts you create on your server.

If you don't import some user accounts from the connected directory server, you can make them external members of groups. You can also give them access to your server's private wikis. For more information, see "Importing Users" on page 91, "Adding or Removing External Members of a Group" on page 123, and "Setting Up Web Services" on page 140.

To connect to a directory server:

1. Open the Accounts pane of System Preferences on your server.
2. Click Login Options and then click Edit.

   If you don't see an Edit button but do see a Join button, you need to configure your server to have its own users and groups before you can configure it to import users from an existing directory server. For instructions, see "Setting Up Users and Groups Management" on page 88.
3. Click the Add (+) button, and then choose the directory server from the pop-up menu or enter the directory server's DNS name or IP address.
4. If the dialog expands to show Client Computer ID, User Name, and Password fields, enter the name and password of a user account on the directory server.
   - *For an Open Directory server,* you can enter the name and password of a standard user account; you don't need to use a directory administrator account. If the dialog says you can leave the name and password fields blank, you can connect without authentication, although this is less secure.
   - *For an Active Directory server,* you can enter the name and password of an Active Directory administrator account or a standard user account that has the "Add workstations to domain" privilege.

Managing Your Server

5

Use the Server Status widget, Server Preferences, Time Machine, and Software Update to check status, change settings, back up and restore, and update server software.

Check status with Server Preferences or the Server Status widget. Find and change server settings with Server Preferences. Use Server Preferences and the Server Status widget on the server itself or over the network from any Mac with Snow Leopard. Set Time Machine preferences to back up the server, and restore using the Time Machine application or the Installer. Keep the server software current with Software Update.

Using Server Preferences

With Server Preferences, you can check the status of services and change essential settings. You can use Server Preferences to manage various aspects of Snow Leopard Server, such as who can use its services, how its services are configured, or what its status is.

Find the setting you need without knowing its exact location

To manage a server with Server Preferences:

1. Open Server Preferences.

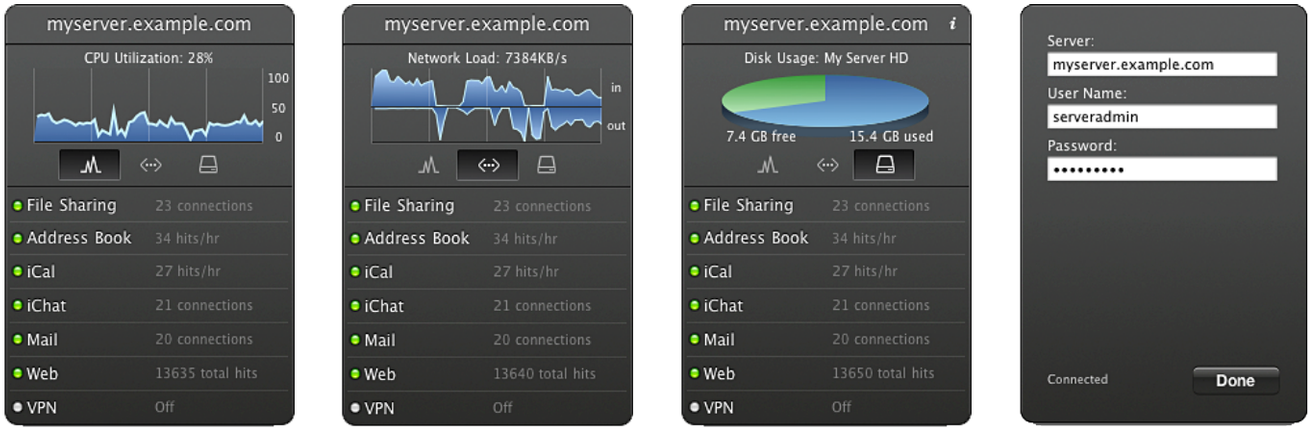
   Server Preferences is located in /Applications/Server/.

2. If Server Preferences asks you for Server, User Name, and Password, enter the server's DNS name or IP address, the name of an administrator user account on the server, and the password for the administrator account.

   The account you created when you set up the server is an administrator account.

Using the Server Status Widget

You can use the Server Status widget to monitor the status of Mac OS X Server either on the server itself or from another computer with Mac OS X Server or Mac OS X.



To use the Server Status widget:

1. Open Dashboard and look for the Server Status widget.

   You can open Dashboard by clicking its icon in the Dock, or by pressing its keyboard shortcut, which is usually the F4 key or the F12 key.

   If you don't see the Server Status widget in Dashboard, click Dashboard's Open (+) button and then click or drag the Server Status widget from the widget bar.

2. If you see the Server, User Name, and Password fields, enter the server's DNS name or IP address followed by an administrator name and password, and then click Done.

3. When the Server Status widget is connected to a server, it displays a graph and other status information about the server and its services.

   - Monitor processor utilization, network load, or disk usage by clicking an icon below the graph.

- Change the processor or network graph's time period to one hour, day, or week by clicking the graph.
- If your server has more than one disk, view the status of each disk in turn by clicking the disk usage graph.
- Check the status indicator and activity statistics for the listed services. A green indicator means the service is running.
- Connect to a different server by moving the mouse to the upper left corner of the widget and clicking the small Info (i) button.

You can open another Server Status widget to see more than one aspect of a server's status at once, or to monitor another server on the network.

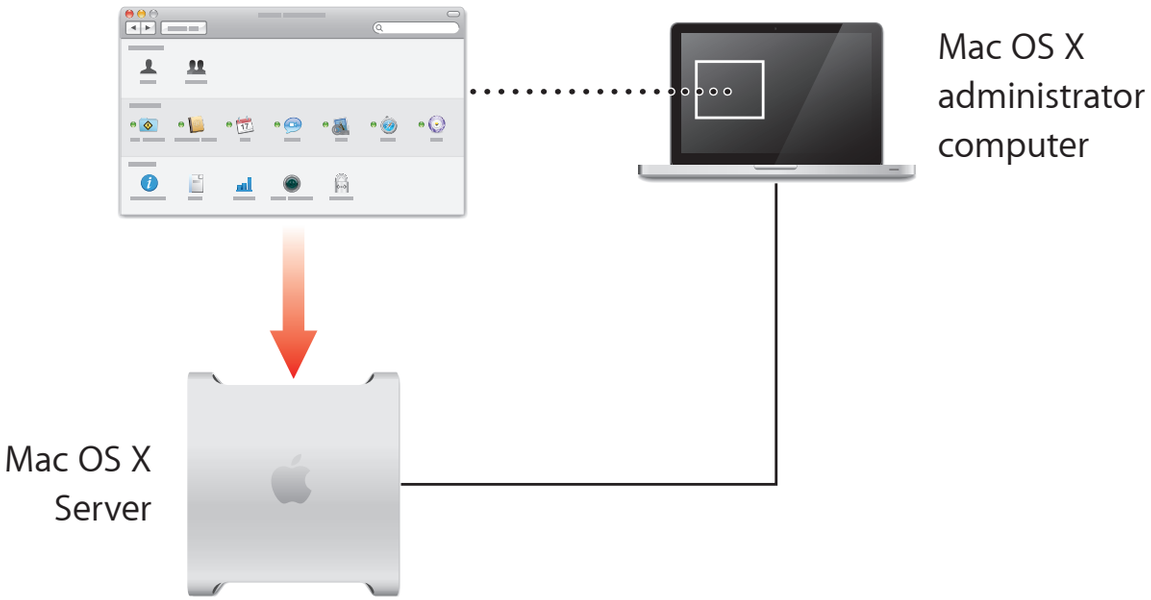
The Server Status widget works with Mac OS X Server v10.6 Snow Leopard and Mac OS X v10.6 Snow Leopard.

For information about widgets and Dashboard, switch to the Finder and then use the Help menu.

You can also see graphs of server activity using Server Preferences. For information, see "Monitoring Server Graphs" on page 169.

Connecting Server Preferences to a Remote Server

You can connect Server Preferences to a server over the network and manage users, groups, services, and system information remotely.



To manage a server remotely:

1. Open Server Preferences on an administrator computer and choose Connection > New Connection.

   For information about administrator computers, see "Preparing an Administrator Computer" on page 51.

2. Enter the remote server's DNS name or IP address and the name and password of an administrator account on the remote server.

   When Server Preferences is connected to a remote server, the server's name or IP address is displayed in the title bar of the Server Preferences window.

To reconnect to a server you have connected to recently, choose Connection > Open Recent Connection, and then choose the server you want.

You can connect Server Preferences to any server with Mac OS X Server v10.6 or later.

Backing Up and Restoring the Server

You can back up server files automatically using Time Machine. It's a comprehensive backup solution for the system. It automatically makes a complete backup of all files on the system to a locally attached external hard drive, an available internal hard drive, or a remote network file system. It also keeps track as files are created, updated, or deleted over time. Time Machine backs up the changes and creates a history of the file system that you can navigate by date. You can use its intuitive time-based visual browser to search back through time to find and restore any files that were backed up.

You can set up a list of folders and disks that you want to exclude from backup. Time Machine automatically excludes temporary and cache files located in /tmp/, /Library/Logs/, /Library/Caches/, and /Users/*username*/Library/Caches/.

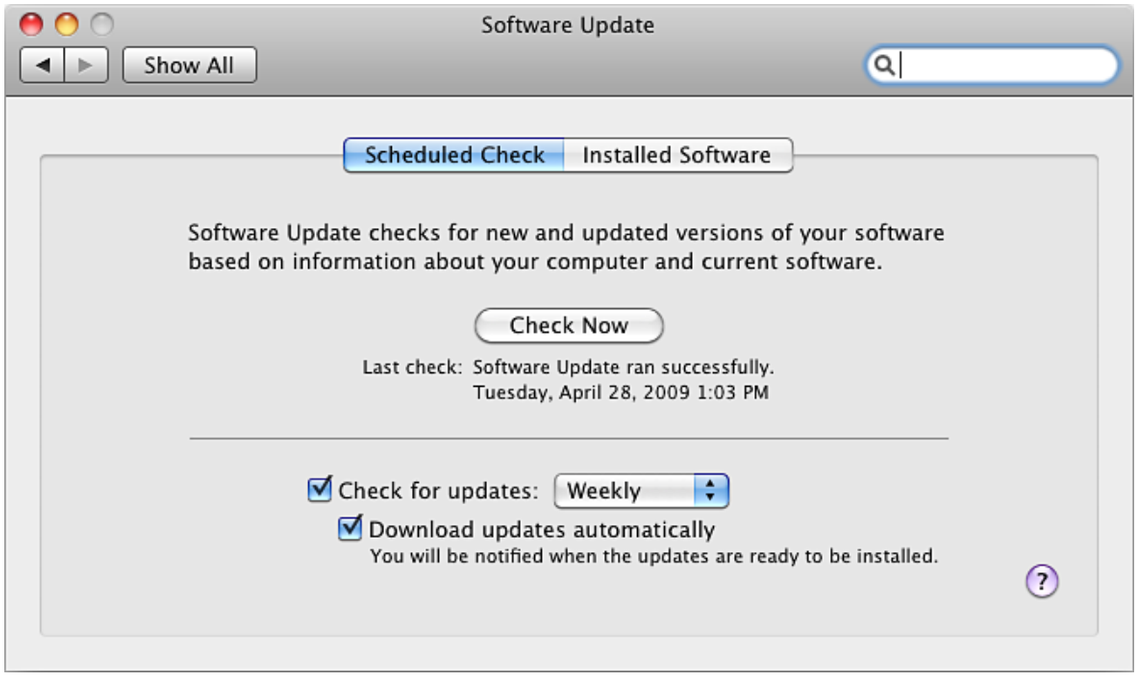
Time Machine automatically backs up data and settings for basic services: file sharing, address book, iCal, iChat, mail, web and wiki, VPN, and Open Directory. Time Machine also automatically backs up some settings for other services, but you may not be able to completely restore settings changed with Server Admin or with command-line tools.

You set backup options in the Time Machine pane of System Preferences on the server, and use the Time Machine application to restore files. You can also restore the system to a previous state using the Installer. For information about backing up and restoring with Time Machine or recovering the server system with the Installer, open System Preferences and then use the Help menu.

For information about backing up users' computers on the server, see "Managing Users' Backup Storage" on page 162.

Keeping Snow Leopard Server Up to Date

When your server is connected to the Internet, Software Update can automatically get the latest free Snow Leopard Server version, security updates, and other enhancements from Apple. You can have your server check for updates daily, weekly, or monthly. You can also check now.



To check for updates or adjust automatic updating:

1. Open System Preferences on the server.
2. Click the Software Update Icon and follow the onscreen instructions.

If your organization has another server with Mac OS X Server, your server may get software updates from it rather than from Apple. An expert administrator can set up Mac OS X Server to provide software update service by using Server Admin.

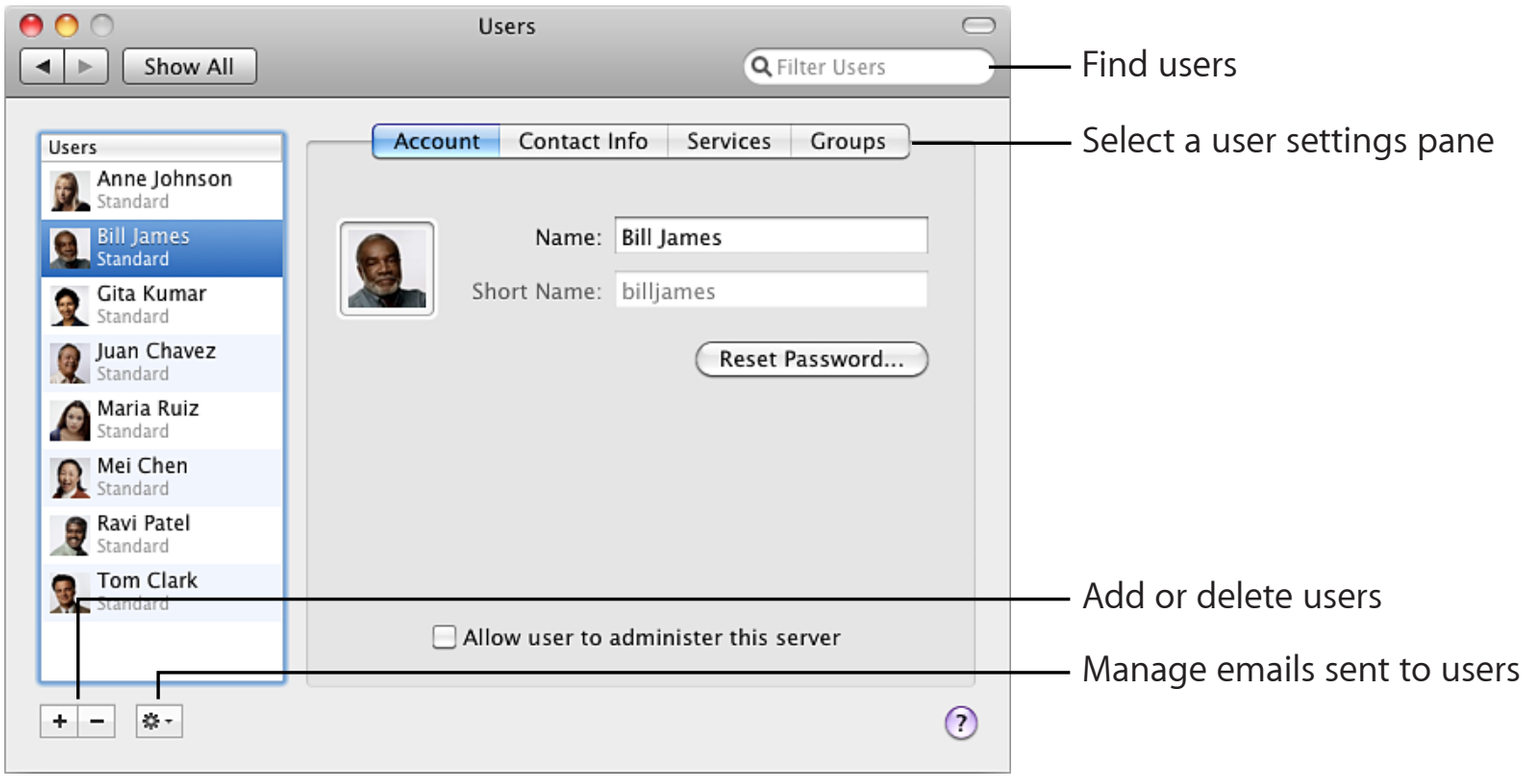
You can also download software updates directly from the Apple Downloads website: www.apple.com/support/downloads/

Managing Users

6

Create or import user accounts, change their settings, or delete them in the Users pane of Server Preferences.

In the Users pane, you set up accounts for people who use the services that this server provides, and you control which services they can access. You can update their contact information and change their group memberships. You can also manage email welcome messages that go to new users.



About User Accounts

User accounts on your server allow users to gain access to services provided by the server. A user account contains the information needed to prove the user's identity for all services that require authentication. A user account also provides a centralized place to store a user's contact information and other data.

Each user account has an email address, an iChat instant messaging address, a personal calendar, and a My Page wiki portal. User accounts can also have access to wikis, blogs, web calendars, a server-based address book, the server's shared files, and Time Machine backup storage, and they can use VPN to access the server remotely. Users can be members of groups, authorizing them to access group shared folders and group wikis. Of course, if any of these services isn't turned on, then users don't have access to it.

You can add user accounts in the Users pane of Server Preferences by:

- Creating new accounts
- Importing existing accounts, if your organization has a directory server that your server is connected to

You can import user accounts individually. You can also automatically import all user accounts that are members of a group.

User Accounts in Your Server's Directory

New user accounts you create are stored in your server's directory. You can use Server Preferences to create and edit them.

Imported User Accounts

Imported user accounts remain in your organization's directory server. You can supplement imported accounts with contact information, group membership information, and so forth. The supplemental information is stored in your server's directory. When someone uses an imported user account, your server automatically combines the account information stored in the directory server with supplemental account information stored in your server's directory.

If your server has imported user accounts, you can use Server Preferences to edit an account's supplemental information in your server's directory, but not the account information in your organization's directory. An administrator of that directory can edit its account information using tools for the directory server.

Local User Accounts

Users with administrator privileges on their Macs can create *local* user accounts using the Accounts pane of System Preferences. These local user accounts are stored on the user's computer. Local user accounts have home folders on the computer and can be used for logging in to the computer. Users can't use their computers' local user accounts to access the server over the network.

Like users' Macs, your server has local accounts in addition to server accounts and possibly imported accounts. Your server's local accounts can be used to log in to it, and a local account with administrator privileges can be used to administer the server. For information about administrator privileges, see "About Administrator Accounts," next.

Types of User Accounts Compared

The following table summarizes key differences among server accounts, imported accounts, and local accounts.

Account type	Stored in	Created by	Used for
Server account	Your server's directory	You (a server administrator), using Server Preferences	Group membership, contact information, authenticating for services
Imported account	Your organization's directory server, with supplements in your server's directory	The directory server's administrator	Group membership, contact information, authenticating for services
Local account	Each Mac OS X computer	A user with an administrator account on the computer, using System Preferences	Logging in to the computer and accessing the home folder

About Administrator Accounts

You need an administrator account on your server to create other user accounts, create groups, change server settings, and perform other tasks using Server Preferences. With an administrator account, you can also make changes to locked preferences in System Preferences, install software on the server, and perform other tasks that standard users can't.

Your server may have two administrator accounts after you finish setting it up for the first time: a primary administrator account and a directory administrator account.

Primary Administrator Account

The server always has a primary administrator account, whose name and password you entered while setting up the server. The primary administrator account is stored on the server along with any user accounts you might create using the Accounts pane of System Preferences. You can use this administrator account on the server itself, and you can use it to manage your server over the network from another Mac.

Directory Administrator Account

If your server hosts users and groups in its own directory, the server also has a directory administrator account. This account has the password you entered for the primary administrator during setup, but its name is Directory Administrator and its short name is diradmin. You can enter a different name and short name if you choose the "Configure manually" option during setup.

The directory administrator account is in your server's directory, along with the standard user accounts you create in the Users pane of Server Preferences. However, the directory administrator account isn't shown in the User pane of Server Preferences. If a malfunction makes the primary administrator account unusable, you can use the directory administrator account on the server itself, and you can use it to manage the server over the network from an administrator computer.

Primary and Directory Administrator Accounts Compared

The following table summarizes similarities and differences between the primary administrator account and the directory administrator account.

Feature	Primary administrator	Directory administrator
Name and short name	Specified during setup	Directory Administrator and diradmin (or specified during setup)
Password	Specified during setup	Same as primary administrator
Stored in the server's directory	No	Yes
Can be used from an administrator computer	Yes	Yes

Administrators on an Upgraded Server

If your server was upgraded or migrated from a standard or workgroup configuration of Mac OS X Server v10.5 Leopard, you have different administrator accounts.

Your primary administrator account is in your server's directory. This is a directory administrator account, and it has the name and short name specified during Leopard Server setup. You also have an administrator account stored on your server, and it has the name Local Administrator and short name localadmin. For more information about these accounts, see *Getting Started* for Mac OS X Server v10.5. It's available on the Apple Manuals website at support.apple.com/manuals/.

Additional Administrator Accounts

When you create a new user account, you specify whether the user is an administrator or a standard user. You can also make an imported user account a server administrator. If you don't want a user to be able to use Server Preferences or install software on the server, don't make the user an administrator.

Administrator Account Security

To keep your server secure:

- Don’t share an administrator name and password with anyone.
- Log out when you leave your server, or set up a locked screen saver using the Screen Saver pane and Security pane of System Preferences. If you leave your server while you’re logged in and the screen is unlocked, someone could sit down at your server while you’re away and make changes using your administrator privileges.
- Never set an administrator to be automatically logged in when the server starts up. If you do, someone can simply restart the server to gain access as an administrator.
- For added security, routinely log in on the server using a standard user account. Use your administrator name and password when you open Server Preferences or another application that requires administrator privileges.

Setting Up Users and Groups Management

If your server wasn't initially set up to manage its own users and groups, you see a "Set Up" button when you view the Users pane or the Groups pane in Server Preferences.

You don't see this window if your server is already configured to manage users and groups.

You can configure your server to have its own directory by clicking this Set Up button. This creates an Open Directory domain on your server and makes your server an Open Directory master. For more information about Open Directory, open Server Admin and then use the Help menu to search for "Open Directory Overview," or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/.

Adding a User Account

You can add an individual user account for each person who uses the services provided by your server. Your server gives each user account its own email address, iChat address, personal calendar, and My Page wiki portal. User accounts can also have access to wikis, blogs, web calendars, a server-based address book, the server's shared files, and Time Machine backup storage, and they can use VPN to access the server remotely. Availability of each service is subject to the service being turned on, and you can individually control each user account's access to services.

To add a new user account:

1. Click the Add (+) button in the Users pane of Server Preferences.
2. If you see a pop-up menu, choose one of the commands:

   Import User From Directory: You can import users' existing accounts from your organization's directory server. For instructions, see "Importing Users" on page 91.

   Create New User: You typically add new users from your organization's directory server if possible, but you can also create new user accounts in your server's directory. To do this, continue with step 3.

   If you don't see a pop-up menu when you click the Add (+) button, your server isn't connected to a directory server. Continue with step 3 to create a user account in your server's directory.
3. Enter the user's name.

   The name can be up to 255 characters (which can be as few as 85 Japanese characters). It can include spaces.

4 If you don't want to use the generated short name, enter a different short name.

After the account is created, you can't change this short name.

The short name typically is eight or fewer characters, but can be up to 255 Roman characters. Use only the characters a through z, A through Z, 0 through 9, . (period), _ (underscore), or - (hyphen).

Note: If a user already has a short name on a Mac, try to use the same short name for the user's account on the server. Having the same short name facilitates the user's access to services.

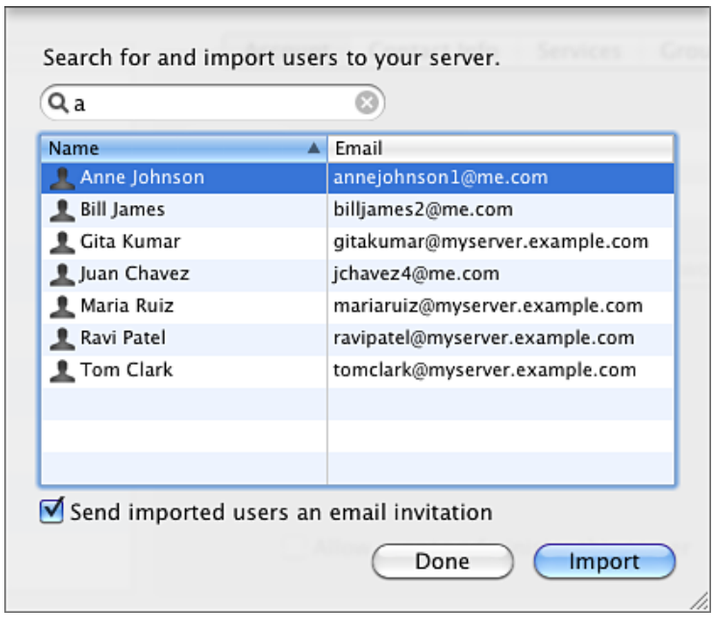
5 Enter the user's password in the Password and Verify fields.

You can use Password Assistant to help you choose a password. Click the Key button at the right of the Password field to see how secure the password is. The user can change this password in the Accounts pane of System Preferences on the user's computer.

6 Select "Allow user to administer this computer" if this user account needs to create other user accounts, create groups, install software on the server, or change server settings.

Importing Users

If your server is connected to your organization's directory server, you can import users' existing accounts



Your server gives each imported user account its own iChat address, personal calendar, and My Page wiki portal. Imported user accounts can also have access to wikis, blogs, web calendars, a server-based address book, the server's shared files, and Time Machine backup storage. If your server's mail service and VPN service are turned on, imported user accounts get email addresses and can use VPN to access the server remotely. Availability of each service is subject to the service being turned on, and you can individually control each imported user account's access to services.

To import a user account:

1. If you're going to have the server send an invitation email to imported users, make sure the custom introduction and the sender's name and email address suit your needs.

   For information, see "Customizing the Server Invitation Email" on page 101.

2. In the Users pane of Server Preferences, click the Add (+) button and choose "Import User From Directory" from the pop-up menu.

   If you don't see a pop-up menu when you click Add (+), your server isn't connected to a directory server in your organization. See "Connecting Your Server to a Directory Server" on page 71.

   If your organization doesn't have a directory server (apart from your server), you can create new user accounts. For instructions, see "Adding a User Account" on page 89.

3. Type part or all of the user's name in the search field, and when you see the name listed, select it, optionally select "Send imported users an email invitation," and then click Import.

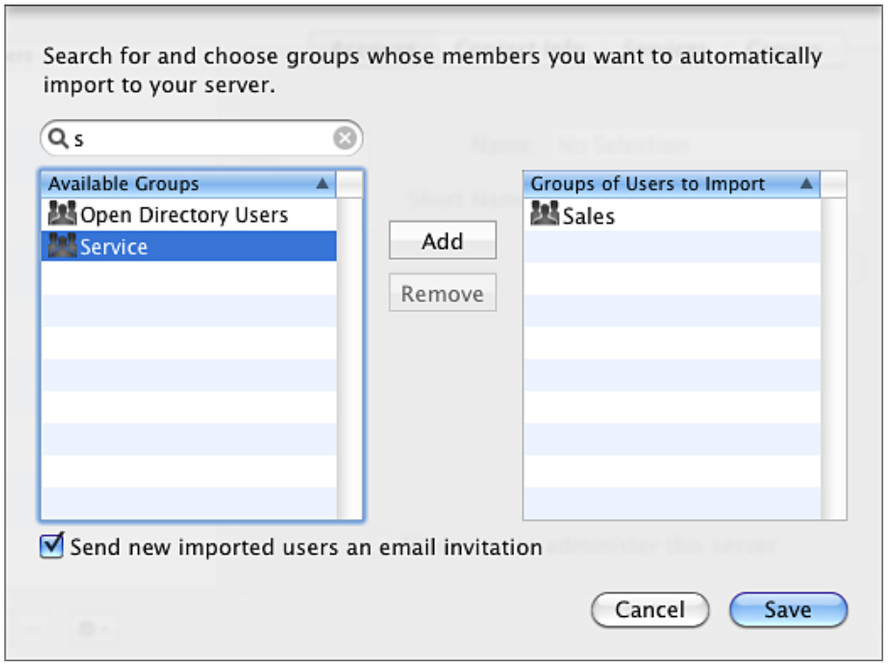
4. When you're finished importing user accounts, click Done.

   User accounts you import using this procedure are shown as "Imported" in the Users pane.

   Instead of importing user accounts individually using this procedure, you can import user accounts automatically from groups. For instructions, see the next section.

Importing Groups of Users Automatically

If your server is connected to your organization's directory server, you can import groups of existing user accounts. If you import a group, your server automatically imports user accounts for all group members. Your server periodically checks with your organization's directory server for changes in each imported group's membership, and automatically adds and removes imported user accounts as users are added to or removed from an imported group.



Your server gives each imported user account its own iChat address, personal calendar, and My Page wiki portal. Imported user accounts can also have access to wikis, blogs, web calendars, a server-based address book, the server's shared files, and Time Machine backup storage. If your server's mail service and VPN service are turned on, imported user accounts get email addresses and can use VPN to access the server remotely. Availability of each service is subject to the service being turned on, and you can individually control each imported user account's access to services.

To import user accounts automatically from groups:

1. If you're going to have the server send an invitation email to imported users, make sure the custom introduction and the sender's name and email address suit your needs.

   For information, see "Customizing the Server Invitation Email" on page 101.

2. In the Users pane of Server Preferences, click the Action (gear) button and choose Import Users From Groups from the pop-up menu.

   If the Action pop-up menu doesn't include this option, your server isn't connected to a directory server. See "Connecting Your Server to a Directory Server" on page 71.

   If your organization doesn't have a directory server (apart from your server), you can create new user accounts. For instructions, see "Adding a User Account" on page 89.

3. Edit the list on the right so it contains the groups whose members you want to import automatically:

   - *To add a group,* type part or all of its name in the search field, and when you see the group in the list on the left, select it and click Add.
   - *To remove a group,* select it in the list on the right and click Remove.

4. Optionally select "Send new imported users an email invitation."

5. When you're satisfied with the list of groups to import, click Save.

   User accounts that are imported automatically from groups are listed as "Automatic" in the Users pane.

   You can also import user accounts individually. For instructions, see the previous topic, "Importing Users," on page 91.

Deleting a User Account

You can use Server Preferences to delete user accounts that are no longer needed for your server.

To delete a user account:

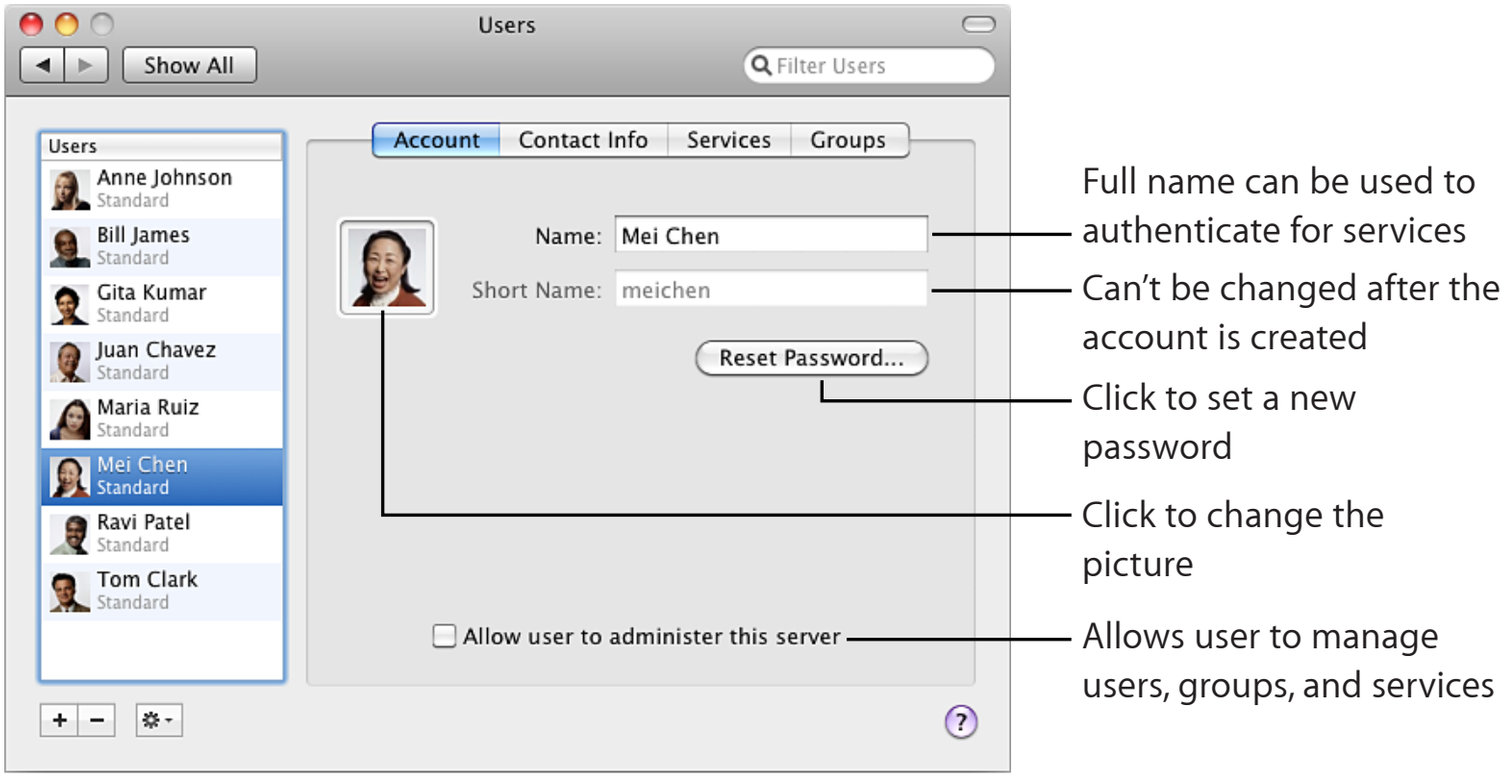
1. In the Users pane of Server Preferences, select the user account you want to delete in the list on the left.
2. Click the Delete (–) button.

Deleting a user account cancels its group memberships and stops its access to group services and private wikis. Deleting a user account also deletes the user's mail stored on the server. A deleted user account can no longer access calendars and address book information on the server.

Deleting a user account doesn't remove the user's backup data. If the Time Machine preferences on the deleted user's computer were set to use the server for backup storage, the user's backup data remains in /Shared Items/Backups/ on the backup disk specified in the Time Machine pane of Server Preferences.

Changing a User's Account Settings

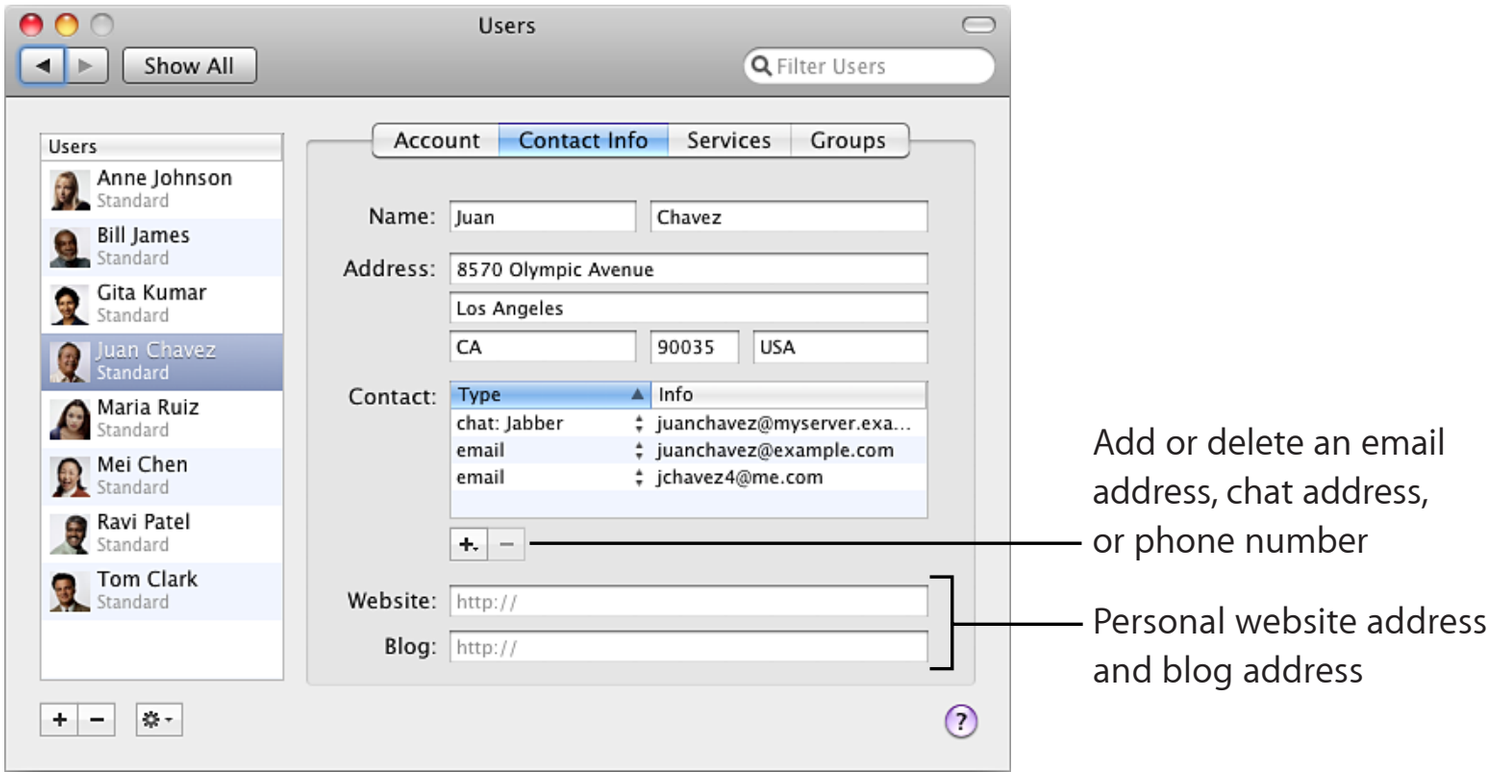
You can change a user's name, password, picture, or administrator privilege by clicking Account in the Users pane of Server Preferences.



If settings besides the short name are dimmed in the Account pane, you can't change them because they are stored in the directory server that your server is connected to.

Changing a User's Contact Information

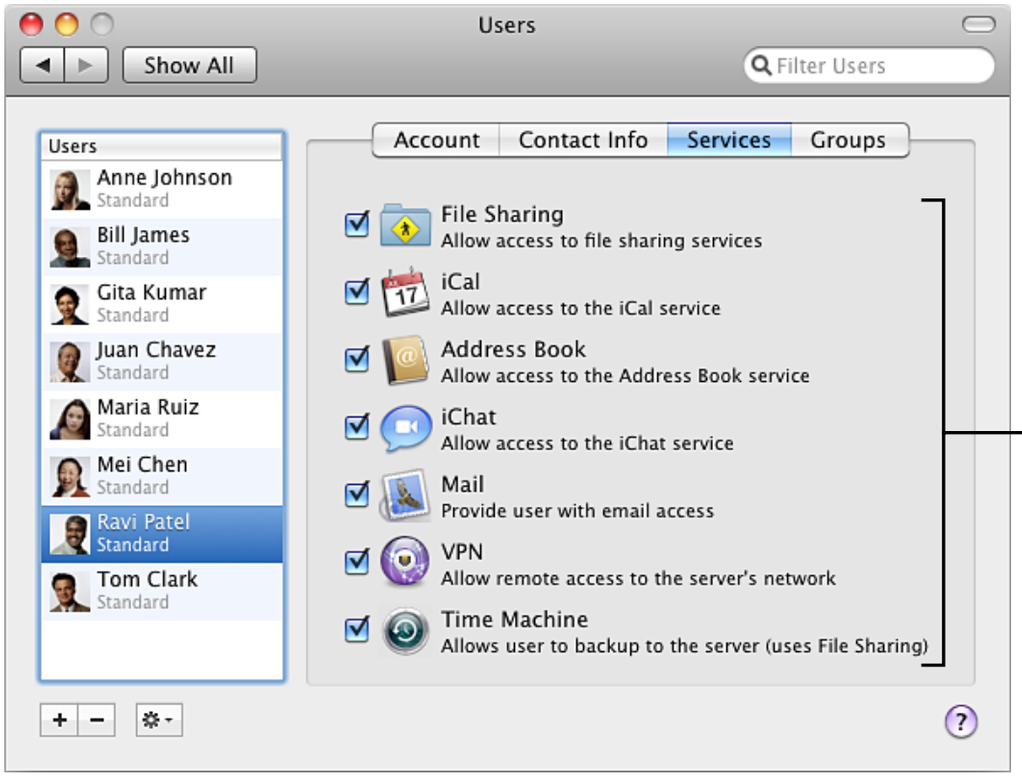
You can change a user's first and last names, address, email and chat addresses, website address, and blog address by clicking Contact Info in the Users pane of Server Preferences.



If some settings in the Contact Info pane are dimmed, you can't change them because they're stored in the directory server that your server is connected to.

Controlling a User's Access to Services

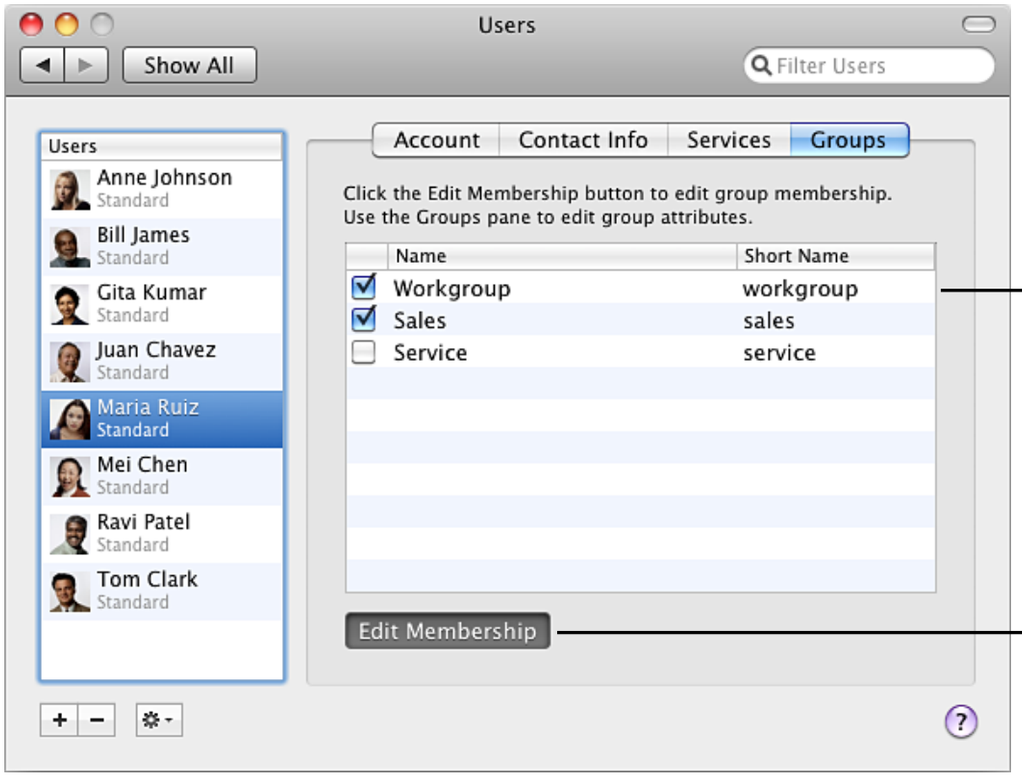
You can control a user's access to individual services by clicking Services in the Users pane of Server Preferences.



Select services you want to let the user access, and deselect services you don't want the user to access

Changing a User's Group Membership

You can add a user to a group or remove a user from a group by clicking Groups in the Users pane.



Select the checkbox of each group you want the user to belong to

Click to begin editing membership, and then click to finish editing

Group members can access the group's file sharing folder, and they can be added to each other's iChat buddy lists automatically. Group members can also be given access to private wikis by the wiki owners. Group members' access to each of these services is subject to it being turned on and the group being allowed to access it.

You can't remove a user from the permanent group named Workgroup, which always includes all users as members.

For information about adding, removing, or configuring groups, see Chapter 8, "Managing Groups."

Customizing the Welcome Email

You can use Server Preferences to add your name, email address, and a personal introduction to the standard email message that your server sends to tell new users about its services. The standard message specifies the server's DNS name and explains the services that the server provides.

The server sends the email automatically when you add a new user account. However, your server doesn't send the email if its mail service is stopped when you add new user accounts.

To customize the email sent to newly added user accounts:

1. In the Users pane of Server Preferences, click the Action (gear) button and choose Email Message Settings from the pop-up menu.
2. Enter the sender's name and email address in the Administrator Full Name field and the Administrator Email field.
3. Optionally enter a personal message in the Welcome field.

   You can use the message to introduce yourself, so recipients know the email is genuine. For example: *Hi, I'm the administrator for our server. If you need help getting services from it, please don't hesitate to send me an email or call me at 310-555-4357. —Bill*

   Users receive the welcome email when they start using their email accounts. They see your introduction in a boxed section set apart from the standard message text that the server generates.

Customizing the Server Invitation Email

You can use Server Preferences to add your name, email address, and a personal introduction to the standard email message that your server can send to tell users how to get its services. The standard message specifies the server's DNS name and explains the services that the server provides. Recipients who have Mac OS X v10.6 Snow Leopard can click a button in the email to automatically set up their Macs to get services from your server.

You can select an option to send the email when you import users or a group of users. The server sends the invitation to email addresses that already exist in the imported user accounts. The server doesn't send the invitation to an imported user account that doesn't contain an email address.

You can also send the invitation email manually. For information, open Server Preferences and then use the Help menu.

To customize the email sent to newly imported user accounts:

1. In the Users pane of Server Preferences, click the Action (gear) button and choose Email Message Settings from the pop-up menu.
2. Enter the sender's name and email address in the Administrator Full Name field and the Administrator Email field.
3. Optionally enter a personal message in the Invitation field.

   If you don't see an Invitation field, your server isn't connected to a directory server. See "Connecting Your Server to a Directory Server" on page 71.

You can use the message to introduce yourself, so recipients know the email is genuine. For example: *Hi, I'm the administrator for our server. If you need help getting services from it, please don't hesitate to send me an email or call me at 310-555-4357. —Bill*

Recipients see your introduction in a boxed section set apart from the standard message text that the server generates.

Customizing the Group Invitation Email

You can use Server Preferences to add your name, email address, and a personal introduction to the standard email message that your server can send to tell new external members of a group how to use the group's services. The standard message specifies the group name and the server's DNS name, and it explains the services that the server provides.

You can select an option to send the email when you add users or groups from your organization's directory server as external members of a group on your server. The server sends the invitation to email addresses that already exist in each new external member's user account. The server doesn't sent the invitation to a new external member whose user account doesn't contain an email address.

To customize the email sent to new external members of a group:

1. In the Users pane of Server Preferences, click the Action (gear) button and choose Email Message Settings from the pop-up menu.
2. Enter the sender's name and email address in the Administrator Full Name field and the Administrator Email field.
3. Optionally enter a personal message in the Group Invitation field.

   If you don't see the Group Invitation field, your server isn't connected to a directory server. See "Connecting Your Server to a Directory Server" on page 71.

   You can use the message to introduce yourself, so recipients know the email is genuine. For example: *Hi, I'm the administrator for the server myserver.example.com, which provides services for the group. If you need help getting group services from the server, please don't hesitate to send me an email or call me at 310-555-4357. —Bill*

   Recipients see your name and message in a boxed section set apart from the standard message text that the server generates.

Managing Users' Computers 7

Learn how to help users set up their computers to use the services your server provides.

Users need to set up their computers to get services from your server. Users with Mac OS X v10.6 Snow Leopard can have their computers set up automatically. Users with an earlier Mac OS X version or with Windows need to set up their computers manually.

Setting Up Users' Macs Automatically

Users who have Mac OS X v10.6 Snow Leopard can automatically set up their Macs to get services from your server. The procedure is different for three types of users, as explained in the following table.

Automatic setup for	Begins when	For information, see
Users who have a new Mac or Snow Leopard newly installed and have an account on your server	Users complete the "Connect to Mac OS X Server" pane during Mac OS X setup	"Setting Up New Macs" on page 108
Current users of Snow Leopard who have accounts on your server	Users connect their computers to your server's network	"Setting Up Macs That Join Your Network" on page 110
Current users of Snow Leopard whose accounts you import using Server Preferences	Users click the button in the invitation email they receive	"Setting Up Newly Imported Users' Macs" on page 111

User Account Changes

After a user finishes one of the automatic setup procedures, the user's local account (on the user's Mac) is tied to the user's server account, and the local account is labeled "Managed" in the Accounts pane of the user's System Preferences.

- If the user's server account is imported from an existing account on a directory server, the local account password is changed to match the server account password, and the passwords are kept in sync.
- If the server account was created on your server (not imported), the local account password isn't changed or kept in sync.

If a user's accounts were created with different user names, the user can change the long name of the local account by using the Accounts pane of System Preferences.

For information about local, server, and imported user accounts, see "About User Accounts" on page 82.

User Access to Services

After finishing automatic setup, the user is ready to access services as shown in the following table. Of course, the user can only access services that are turned on. You can control each user's access to services individually, as described in "Controlling a User's Access to Services" on page 98.

Mac OS X application	Is ready to access
Address Book	Server-based contact information
Finder	Shared folders at afp://*myserver.example.com* and smb://*myserver.example.com*
iCal	User's server-based calendar
iChat	User's Jabber account and buddy list
Mail	User's email account and other users' email addresses
Safari	Server website: http://*myserver.example.com* Click links to see My Page, wikis, blogs, calendars, and webmail.
Network preferences	VPN connection
Time Machine preferences	Backup storage on the server

Setting Up New Macs

During initial setup of a new Mac or a Mac with Mac OS X v10.6 Snow Leopard newly installed, the "Connect to Mac OS X Server" pane lets the user choose your server if the user has an account on it.

The "Connect to Mac OS X Server" pane appears only if the Mac detects a server with Snow Leopard Server on the network. The user must have an account in the Users pane of Server Preferences, and the server must have at least one service turned on in Server Preferences.

If the user completes this pane:

- A local user account is created on the user's Mac, based on the user's account on the server. Both accounts have the same long name, short name, and password.
- A home folder is set up on the user's computer.
- The user's computer is automatically connected to your server and configured to get services from it. For information, see "User Access to Services" on page 107.

The user may be unable to complete the "Connect to Mac OS X Server" pane for several reasons. For example:

- The user may not know your server's name or may not have a user account on the server. In these cases, the user can skip the "Connect to Mac OS X Server" pane by deselecting "Use the following Mac OS X Server."
- The user's Mac may not be connected to the network during initial setup. In this case, the "Create Your Account" pane appears instead of the "Connect to Mac OS X Server" pane, and the user creates a new account not based on a server account.

If the user doesn't complete the "Connect to Mac OS X Server" pane for any reason, the user can finish initial setup and then configure the Mac later to get services from your server. For information about how the user does this, see the next section.

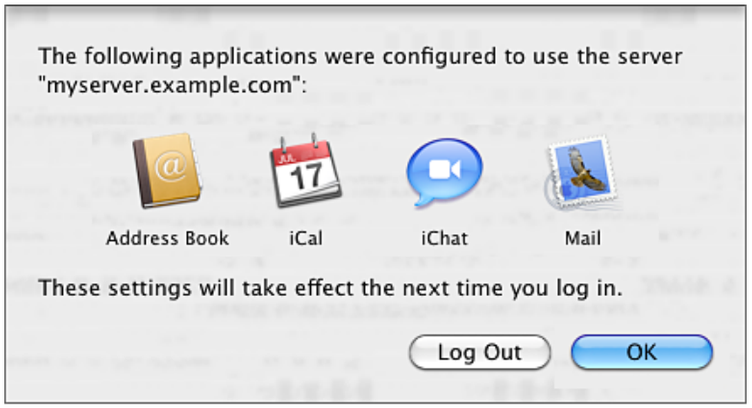
Setting Up Macs That Join Your Network

If a Mac with Mac OS X v10.6 Snow Leopard isn't connected to a server yet, and the Mac ascertains that the user currently logged in matches a user account created on your server, the Mac displays an invitation, offering to set up connections to your server. The user can accept the invitation, decline it, or postpone action until the next login. If the Mac discovers more than one server that the user can connect to, the invitation offers the user a choice of servers.

The invitation appears only if the Mac has Snow Leopard and detects a server with Snow Leopard Server on the network. The user's local account on the Mac must have the same name or short name as a user account on the server, and the server must have at least one service turned on. If the user is logged in on the Mac when you add an account for the user on the server, the user needs to log out and log in again (or restart the Mac) to see the invitation. If the user's account on the server is imported from a directory server, the user gets an email invitation and doesn't see this invitation window. If a Snow Leopard user doesn't see the invitation, the user can manually start the setup process by using the Accounts pane of System Preferences. For instructions, see "Setting Up a Mac by Using Accounts Preferences" on page 112.

If the user accepts the invitation, the Accounts pane of System Preferences opens. It asks for the name and password of the user account on your server.

Then Accounts preferences sets up the user's Mac and displays information about what it did. For more information, see "User Account Changes" on page 106 and "User Access to Services" on page 107.



Setting Up Newly Imported Users' Macs

If some users already have Mac OS X v10.6 Snow Leopard set up, and you import their user accounts from a directory server, your server can send an email inviting them to join the server. Snow Leopard users can click a button in the invitation email to have their applications automatically set up to get services from your server.

Note: To receive an invitation email, an imported user must have an email address in the user's account on the directory server.

When a Snow Leopard user clicks the button in the invitation email, the Accounts pane of System Preferences opens. It asks for the name and password of the user account on your server.

For information about how the Mac is set up, see "User Account Changes" on page 106 and "User Access to Services" on page 107.

If a Snow Leopard user doesn't have the invitation email, you can send one manually by using the Action button in the Users pane. For instructions, open Server Preferences and then use the Help menu.

For information about adding your name, email address, and a personal introduction to the standard message text that the server generates for the invitation email, see "Customizing the Server Invitation Email" on page 101.

Setting Up a Mac by Using Accounts Preferences

If a Mac with Snow Leopard isn't connected to a server yet, and the invitation to get services from your server doesn't appear automatically, the Mac user can manually connect to your server. The user will need to connect manually if the user's local account on the Mac doesn't have a name or short name that matches a user account on the server, or if the server is on a different local network (IP subnet) than the Mac. The user may also need to connect manually if the user previously declined an invitation to use your server or the user removed the Mac's connection to your server and needs to add it back.

To connect a Mac to your server:

1. On the Mac, open the Accounts pane of System Preferences and click Login Options.
2. Click the Join button, or click the Edit button and then click the Add (+) button.

   You see the Join button if the Mac isn't connected to a directory server yet.

   You see the Edit button if the Mac is already connected to a directory server.
3. Choose your server from the pop-up menu, or enter your server's DNS name or IP address.

4 If a dialog appears offering to set up services, choose whether to have the user's applications set up to get services from your server.

- *If you want applications set up to get services from your server,* click Set Up Services. Then enter the name and password of the user's account on the server.

  For information about how the Mac is set up, see "User Account Changes" on page 106 and "User Access to Services" on page 107.

- *If you only want the Mac connected to your Open Directory domain,* click Only Join. The user's applications aren't set up, and the user's local account isn't tied to the user's server account.

The dialog offering these choices doesn't appear if your server doesn't have any services turned on in Server Preferences, or if the server specified in step 3 isn't running Mac OS X Server v10.6 or later.

Setting Up Users' Computers Manually

Users who have Mac OS X v10.5 Leopard or earlier, or who are running Windows, can get services from your server by configuring their applications manually. They can use the following settings, replacing the italicized placeholders with your server's DNS name and the user's short name. Users who have Mac OS X v10.6 Snow Leopard normally see an invitation to set up their applications automatically, but they can also configure their applications manually. For information about the invitation, see "Setting Up Macs That Join Your Network" on page 110.

Settings for applications
Finder or other SMB or AFP file sharing client afp://*myserver.example.com* smb://*myserver.example.com*
Address Book (with Mac OS X v10.6 Snow Leopard) or other CardDAV contacts application Server address: *myserver.example.com* User name: the name of the user account on the server Password: the password of the user account on the server
iCal (with Mac OS X v10.6 Snow Leopard) Account type: automatic (CalDAV) Email address: *usershortname@myserver.example.com*
iCal (with Mac OS X Server v10.5 Leopard) or other CalDAV calendar application Personal calendar subscription (read only): http://*myserver.example.com*:8008/calendars/users/*usershortname*/calendar/
iChat or other XMPP instant messaging application Account type: Jabber Server address: *myserver.example.com* Jabber ID: *usershortname@myserver.example.com* Authentication: Kerberos v5 preferred (other standard methods supported) Port: 5223

Settings for applications
Mail or other email application Account type: IMAP or POP Incoming mail server: *myserver.example.com* Outgoing mail server: *myserver.example.com* Email address: *usershortname@myserver.example.com* Authentication: Kerberos v5 preferred (other standard methods supported)
Safari or other web browser Server website: http://*myserver.example.com* Click links to see My Page, wikis, blogs, calendars, and webmail.
Network preferences or other VPN connection, such as Internet Connect in Mac OS X v10.4 Tiger. See "Setting Up a Mac User's VPN Connection," next, or "Setting Up a User's VPN Connection Manually" on page 117

Setting Up a Mac User's VPN Connection

You can use Server Preferences to generate a file that a Mac user can open to create a VPN configuration automatically. Then the user can make a VPN connection to the server and its network via the Internet. The configuration file works with Mac OS X v10.3 or later. For information about generating the configuration file, see "Creating a VPN Configuration File" on page 148.

When you give Mac users the generated VPN configuration file, you can also give them the following instructions for using it.

Using a VPN Configuration File

If you got a VPN configuration file from the person who manages your server, and you have Mac OS X v10.3 or later, you can use the file to set up your computer for making VPN connections to the server. The configuration file contains all the information necessary to make a VPN connection to the server, except the name and password of your user account on the server.

To import a VPN configuration from a file:

1. Open the file, and select VPN (L2TP) if asked where to put the imported configuration.
2. Enter your user account name in the Account Name field.
3. If the server administrator tells you to enter your user account password, enter it in the Password field.

   If you have Mac OS X v10.6 Snow Leopard or Mac OS X v10.5 Leopard, click Authentication Settings to see the Password field.

   For security, the administrator may tell you not to enter your password now.
4. Quit the application, and save or apply your changes when prompted.

If you want to make a VPN connection from a network with a firewall, configure it to allow traffic on UDP ports 500, 1701, and 4500; on TCP port 1723; and on IP protocol 50.

If you didn't enter your password before saving the VPN configuration, you'll be asked to enter it each time you make a VPN connection to the server.

Setting Up a User's VPN Connection Manually

Users may be unable to import VPN settings from a configuration file because they don't have the file, or because they have Windows computers, which can't use the file. These users can manually set up their computers for a VPN connection to your server. They need to create a new VPN configuration and enter the following VPN connection settings:

VPN server or host: your server's DNS name or public IP address

VPN type: L2TP over IPSec

Shared secret (key) for IPSec: shown in the VPN pane of Server Preferences when you click Edit and select "Show shared secret"

Account name: the short name of the user's account on your server

User password: the password of the user's account on your server

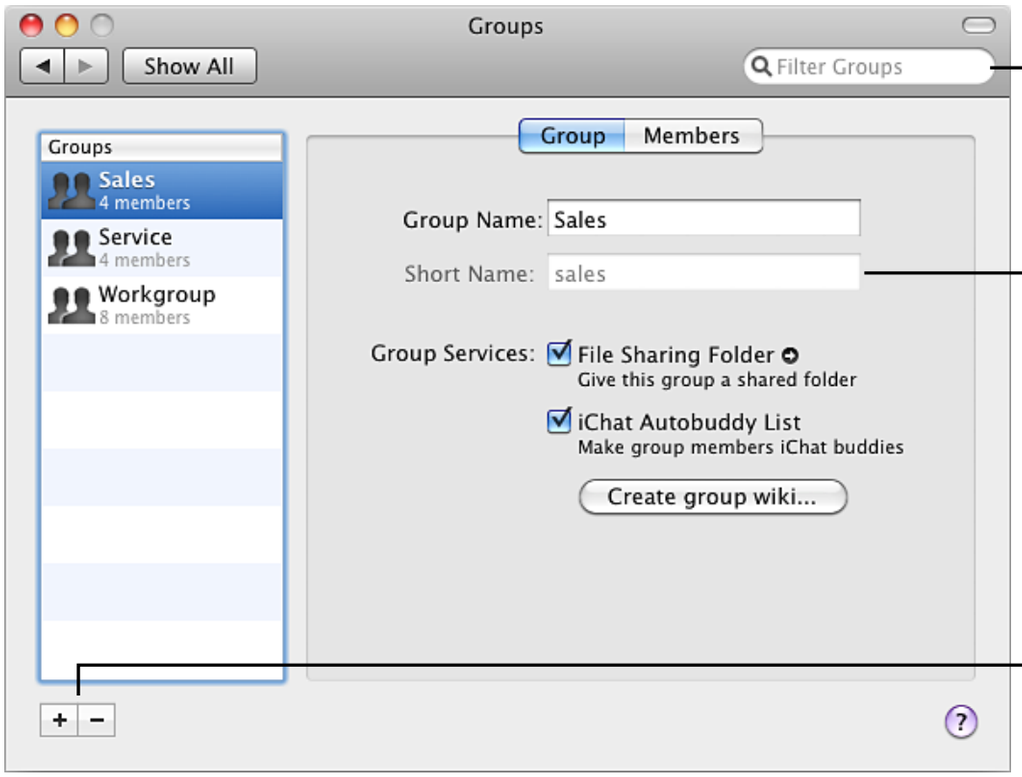
Users who want to make a VPN connection from a computer or network with a firewall need to configure the firewall to allow traffic on UDP ports 500, 1701, and 4500; on TCP port 1723; and on IP protocol 50.

Managing Groups

8

Use the Groups pane to add or delete groups, see and change group membership, or configure group services.

In the Groups pane, you create groups, turn group services on or off, add or remove group members, and delete unneeded groups.



Creating a New Group

You can create a new group whenever some server users need their own shared group folder, or when you need to control access to shared folders and files.

To create a new group:

1. Click the Add (+) button in the Groups pane of Server Preferences.
2. Enter a name for the group, and optionally change the short name.

   The group name can be up to 255 characters (which can be as few as 85 Japanese characters). It can include spaces.

   After you create the account, you can't change the short name. If you don't want to use the generated short name, enter a different short name.

   The short name typically is eight or fewer characters, but can be up to 255 Roman characters. Use only the characters a through z, A through Z, 0 through 9, . (period), _ (underscore), or - (hyphen).
3. Select the services you want the group to have, and deselect the services you don't want the group to have.

   File Sharing Folder: Provides a file sharing folder for the group. Members can get files from the group's shared folder and put files in it. It's named after the group's short name and is located on the server's startup disk in the /Groups/ folder. Clicking the link arrow next to File Sharing Folder opens the group's shared folder in the Finder.

   iChat Autobuddy List: Automatically adds the Jabber IDs (screen names) of all group members to each member's Jabber buddy list. If the group has external members, they aren't included in the iChat autobuddy list.

Create group wiki: Opens your web browser and starts the process of creating a wiki using this group's name. While creating the wiki, you select a visual theme and set access permissions. The wiki initially includes a web calendar, blog, and mailing list. You can customize the wiki after creating it. For more information, click the Help link on any wiki page.

If a wiki has been created using this group's name, the "Create group wiki" button is replaced by a link to the wiki the next time you view the Groups pane in Server Preferences.

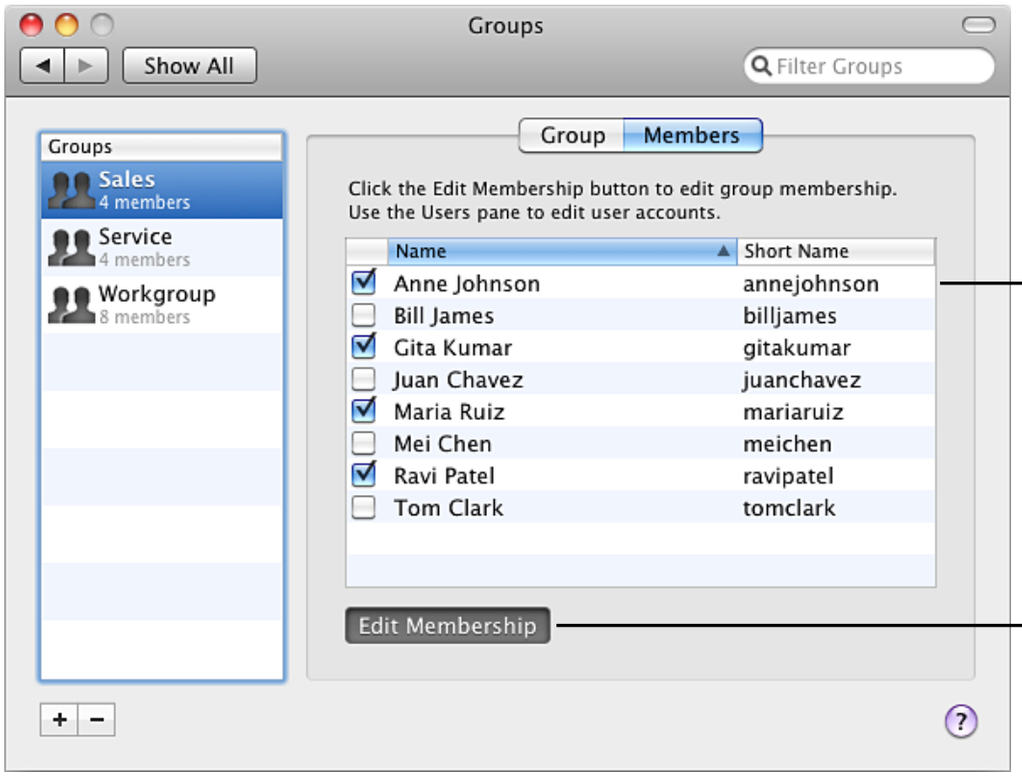
4 Add users to the group by clicking Members. Add users and groups from your organization's directory server by clicking External Members. For instructions, see "Adding or Removing Members of a Group" on page 122 and "Adding or Removing External Members of a Group" on page 123.

If you don't see an External Members tab (shown on page 123), your server isn't connected to a directory server. See "Connecting Your Server to a Directory Server" on page 71.

To access shared folders or private wikis that the group has permission to use, group members must authenticate using their user account name and password. Availability of group services is subject to file sharing service, iChat service, and web services being turned on.

Adding or Removing Members of a Group

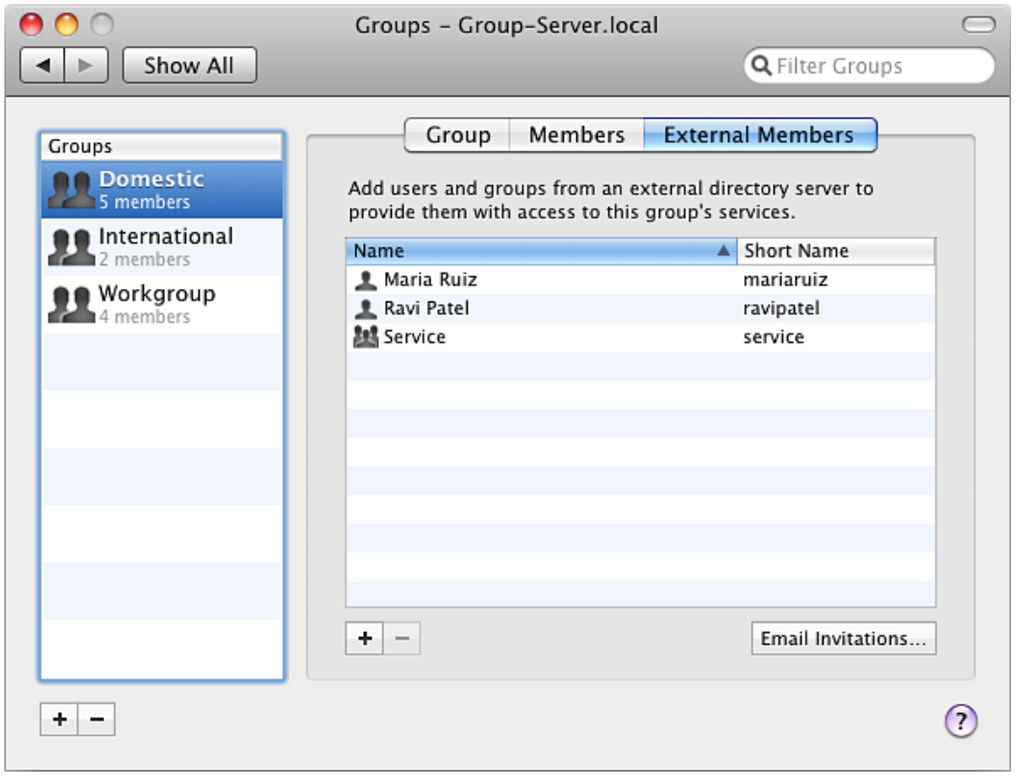
In the Groups pane, you can add or remove group members who are users you've created or imported in the Users pane. (To have imported users, your server must be connected to a directory server.)



For information about adding, deleting, or configuring user accounts, see Chapter 6, "Managing Users."

Adding or Removing External Members of a Group

If your server is connected to a directory server, your group members can include users and groups from the directory server. External members don't have user accounts on your server, but they can access the group's shared folder and wikis that the group has permission to view.



If you don't see an External Members tab, your server isn't connected to a directory server in your organization. If your organization has a directory server, you can connect to it. For instructions, see "Connecting Your Server to a Directory Server" on page 71.

To add or remove external group members:

1. Before adding external group members, be sure the group invitation email is worded to suit your needs.

   For information, see "Customizing the Group Invitation Email" on page 102.

2. In the Groups pane of Server Preferences, select the group you want to change in the list on the left, and click External Members.

3. To remove an external group member, select the member in the list on the right, and then click the Delete (–) button below the list of members.

4. To add a group member, click the Add (+) button below the list of members.

5. Select a prospective member from the list, optionally select "Send added users an email invitation," and then click Add to Group.

   - To search for a user or group, type the first part of the name in the search box.
   - To show or hide users and groups below a heading, click the triangle in the heading.

6. When you finish adding members, click Done.

   For information about adding, deleting, or configuring user accounts, see Chapter 6, "Managing Users."

Customizing Services

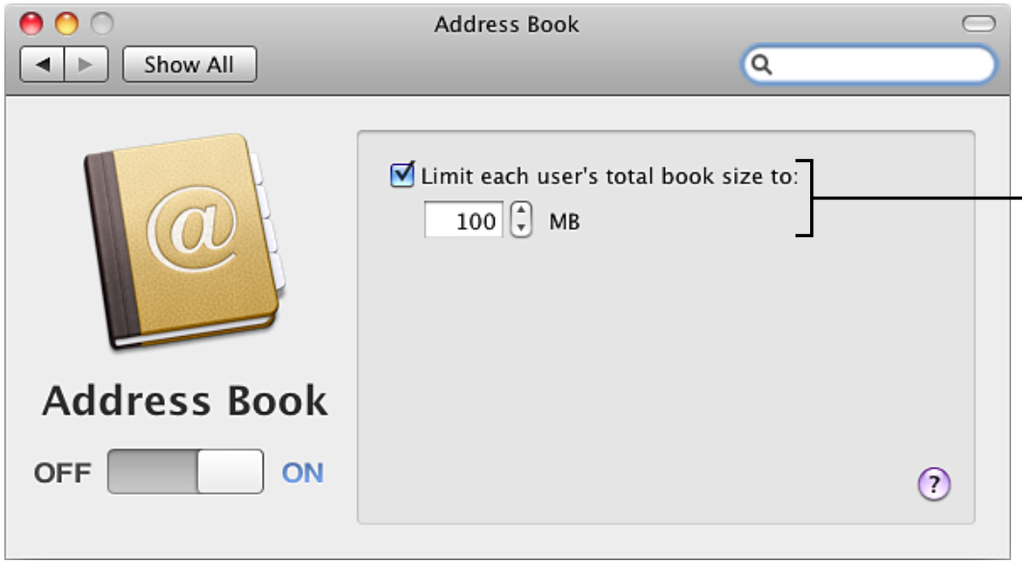
9

Use Server Preferences to change settings for file sharing, address book, iCal, iChat, mail, web, and VPN services.

The Services section of Server Preferences includes the File Sharing, Address Book, iCal, iChat, Mail, Web, and VPN panes.

Managing Address Book Service

Use the Address Book pane to turn address book service on or off, or to limit each user's disk space for contact information stored on the server.



About Address Book Service

The address book service for Mac OS X Server, Address Book Server, allows users to keep contact information on the server.

Users can view and add contact information in a server-based address book by using the Address Book application on any Mac with Snow Leopard on the network. A Mac with Snow Leopard can have its Address Book application automatically set up to use a server-based address book. See "Setting Up Users' Macs Automatically" on page 105.

Address Book Server also works with other contact management applications that support the CardDAV open standard, such as the open source, cross-platform Mulberry (www.mulberrymail.com). See "Setting Up Users' Computers Manually" on page 113.

If you want to allow access to Address Book Server on the Internet and you have a cable router, DSL router, or other network router, your router must have port forwarding (port mapping) configured for Address Book Server. For more information, see "Protecting a Small Network" on page 35.

If you want to allow access to Address Book Server outside your local network and your local network has a separate firewall device, ask the firewall administrator to open the firewall for the ports that Address Book Server uses. For a list of ports, see "Services and Ports" on page 175.

Managing File Sharing Service

Use the File Sharing pane to turn file sharing service on or off, and to control access to the Groups, Public, and Users shared folders. You can also add or remove your own shared folders, also known as *share points*.

Allow or deny access to the shared folder

Add or delete shared folders

Give read and write access to all registered users or only some users and groups, and allow or deny read-only access to guests

About File Sharing Service

Mac OS X Server file sharing service lets users access shared folders and store files on the server. They can use Macintosh, Windows, or UNIX computers to access their files and shared folders without special software, using native file protocols such as AFP and SMB. Windows users see Mac OS X Server file servers in their Network Places, just like Windows file servers.

If you want to allow access to file sharing on the Internet and you have a cable router, DSL router, or other network router, your router must have port forwarding (port mapping) configured for file sharing. For more information, see "Protecting a Small Network" on page 35.

If you want to allow access to file sharing outside your local network and your local network has a separate firewall device, ask the firewall administrator to open the firewall for the ports that file sharing uses. For a list of ports, see "Services and Ports" on page 175.

Controlling Access to a Shared Folder

You can enable or disable access to each shared folder listed in the File Sharing pane of Server Preferences. You can specify which users and groups have read and write access to each shared folder and its contents: all users with accounts on your server or only users and groups you select. You can also choose whether to allow guest access for each shared folder.

To change settings for a shared folder:

1. In the File Sharing pane of Server Preferences, locate the shared folder in the list.
2. To enable access to a shared folder, select its checkbox.
3. To give all users with accounts on your server read and write access to the shared folder and its contents, click Edit Permissions and select "All registered users."

4 To restrict read and write access to the shared folder and its contents, click Edit Permissions, select "Only these registered users and groups," and select the checkbox next to each user and group you want to give read and write access to.

If you give a group read and write access, all users who are members have read and write access even if their individual checkboxes are deselected.

5 To allow guest users to read the contents of a shared folder, click Edit Permissions and select "Allow guests read-only access." Deselect this option to disallow guest access.

Users who have permission to access a shared folder can use the AFP and SMB file sharing protocols to access the folder.

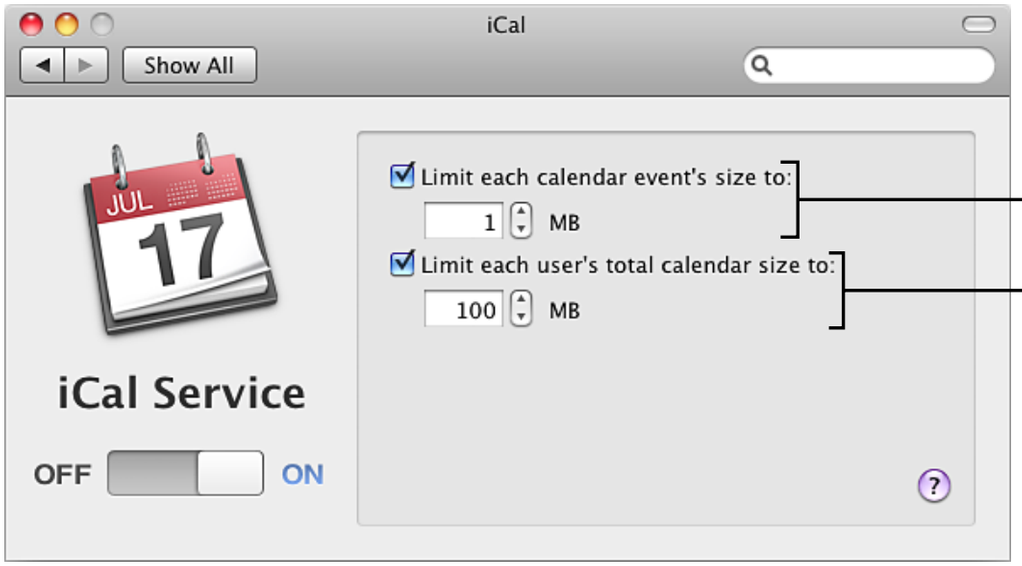
Registered users and members of groups authenticate for read and write access by using the name and password of their user account on the server. An external member of a group has no account on the server, but can authenticate using the name and password of the member's external user account.

Guests don't authenticate for read-only access to a shared folder. Unlike registered users, guests don't need user accounts on your server.

You can also change access permissions for a shared folder or any item in it by using the Info window in the Finder. For information about setting permissions for folders and files, switch to the Finder and then use the Help menu.

Managing iCal Service

Use the iCal pane to turn iCal calendar service on or off, limit the size of file attachments, or limit each user's total calendar data.



Use iCal Server Utility (in /Applications/Server/) to create, edit, or delete the locations and resources that users can reserve when they schedule meetings in shared calendars hosted by iCal Server. Locations are rooms or other landmarks that aren't associated with specific people. Resources are shared equipment such as printers, scanners, or projectors. For more information, open iCal Server Utility and then use the Help menu.

About iCal Service

The calendar service for Mac OS X Server, iCal Server, makes it easy for users to share calendars, schedule meetings, and coordinate events within a workgroup, a small business, or a large organization. Colleagues can quickly and easily check each other's availability, set up and propose meetings, book conference rooms, reserve projectors, and more. iCal Server sends the invitations, which can include information such as an agenda or to-do list, and tabulates replies.

A computer with Mac OS X v10.6 Snow Leopard can have its iCal application automatically set up to use iCal Server. See "Setting Up Users' Macs Automatically" on page 105. For information about scheduling events, inviting other users, receiving and replying to invitations, and so forth, Mac OS X users can open iCal and then use the Help menu.

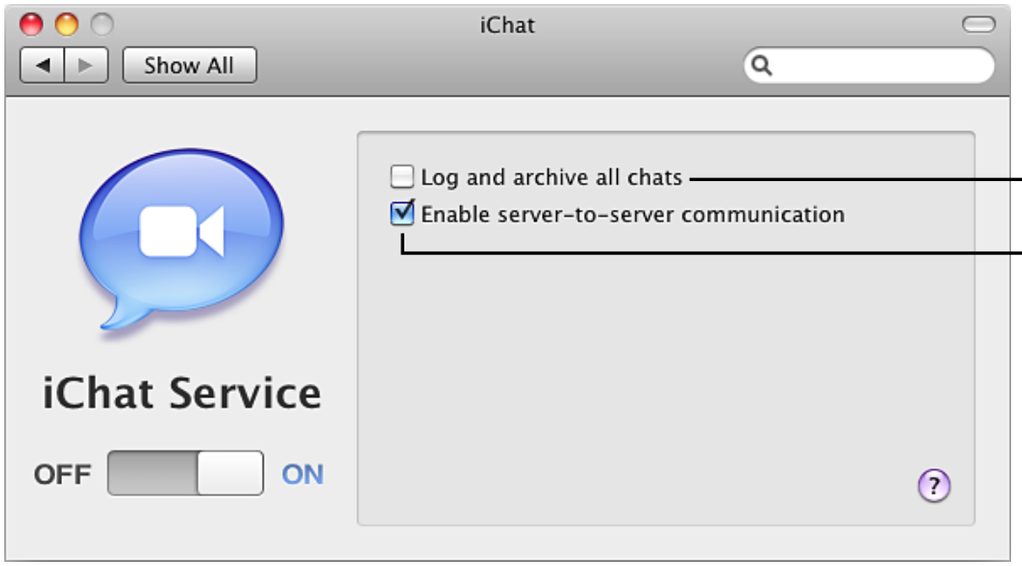
iCal Server also works with Calendar on iPhone, web calendars in Snow Leopard Server wikis, and other popular calendar applications that support the standard CalDAV protocol. See "Setting Up Users' Computers Manually" on page 113.

If you want to allow access to iCal Server on the Internet and you have a cable router, DSL router, or other network router, your router must have port forwarding (port mapping) configured for iCal Server. For more information, see "Protecting a Small Network" on page 35.

If you want to allow access to iCal Server outside your local network and your local network has a separate firewall device, ask the firewall administrator to open the firewall for the ports that iCal Server uses. For a list of ports, see "Services and Ports" on page 175.

Managing iChat Service

Use the iChat pane to turn iChat instant messaging service on or off, enable chatting with other instant messaging systems, or set up logging and archiving of all chats.



Save a transcript of all chats, and archive it once a week in a compressed file

Let users chat with users on other XMPP instant messaging systems such as Google Talk

About iChat Service

iChat service provides instant messaging (IM) for Macintosh, Windows, and Linux users. Team members can brainstorm solutions, make plans, exchange URLs, or transfer files, without worrying about outsiders intercepting confidential information. iChat service provides text messaging between users or among multiple users. It also facilitates direct connections between users for audio, video, and multiway audio and video sessions.

Users' iChat account information is stored on the server. Users may access their accounts from any Mac and see the same buddy lists, groups, and so forth.

A computer with Mac OS X v10.6 Snow Leopard can have its iChat application automatically set up to use your server's iChat service. See "Setting Up Users' Macs Automatically" on page 105.

iChat service also works with the iChat application in earlier Mac OS X versions, Google Talk, and other instant messaging software that uses the XMPP protocol, called Jabber, which is available for Windows and Linux computers.

If you want to allow access to iChat service on the Internet and you have a cable router, DSL router, or other network router, your router must have port forwarding (port mapping) configured for iChat service. For more information, see "Protecting a Small Network" on page 35.

If you want to allow access to iChat service outside your local network and your local network has a separate firewall device, ask the firewall administrator to open the firewall for the ports that iChat service uses. For a list of ports, see "Services and Ports" on page 175.

Managing Mail Service

Use the Mail pane to turn mail service on or off, specify a relay server for outgoing mail, or adjust junk mail and virus filtering.

About Mail Service

Mail service lets users send and receive email on your local network and the Internet, using any email application. Mail service includes filters that protect users from junk mail and viruses.

Everyone with a user account on your server gets an email address. A computer with Mac OS X v10.6 Snow Leopard can have its Mail application automatically set up to use your server's mail service. See "Setting Up Users' Macs Automatically" on page 105.

Mail service also works with Mail on iPhone and other popular mail applications that use the standard IMAP, POP, and SMTP email protocols.

If you want to allow access to mail service on the Internet and you have a cable router, DSL router, or other network router, your router must have port forwarding (port mapping) configured for mail service. For more information, see "Protecting a Small Network" on page 35.

If you want to allow access to mail service outside your local network and your local network has a separate firewall device, ask the firewall administrator to open the firewall for the ports that mail service uses. For a list of ports, see "Services and Ports" on page 175.

Specifying a Mail Relay Server

Your mail service can relay outgoing mail through another server, and that relay server will forward the mail to its destination.

- If you use a commercial Internet service provider (ISP), it may stipulate that all outgoing email be relayed through a designated server.
- If your organization provides your Internet service, your server may need to use a relay server to deliver outgoing mail through a firewall. In this case, your organization will designate a particular server for relaying mail through the firewall.
- You need to use a relay server if the DNS service for your ISP or organization can't resolve the public IP address of your server (or your AirPort Base Station or other router) to your server's DNS name; this is called a *reverse lookup*.

Important: Use a relay server only if your ISP or organization requires one. Relaying mail through another server without permission may make your server appear to be a mail service abuser.

To relay outgoing mail through another server:

1. In the Mail pane of Server Preferences, select "Relay outgoing mail through ISP."

   If this option is already selected, click the Edit button next to it.

   A dialog appears for entering the relay server connection details.
2. Enter the relay server's DNS name or IP address supplied by your ISP or organization.
3. If your ISP or organization also requires your server to authenticate before sending mail, select "Enable SMTP relay authentication" and enter the user name and password from your ISP or organization.

Rejecting Mail from Blacklisted Senders

Your server's mail service can reject mail from other mail servers that are blacklisted as open relays by a DNS blacklist (DNSBL) server. Your mail service uses the DNSBL server zen.spamhaus.org, which is operated by The Spamhaus Project (www.spamhaus.org). You can specify a different DNSBL server. DNSBL servers are also known as Real-time Blacklist (RBL) servers or black-hole servers.

Blocking unsolicited mail from blacklisted senders might not be completely accurate. Sometimes it prevents receiving valid mail from mail servers that are configured incorrectly.

To specify the DNSBL server you want mail service to use:

- In the Mail pane of Server Preferences, select "Reject email from blacklisted senders," click the Edit button next to this option, and then enter the DNSBL server's address.

Scanning for Incoming Junk Mail and Viruses

You can have mail service scan incoming messages for junk mail and viruses.

To have mail service scan for junk mail and viruses:

1. In the Mail pane of Server Preferences, select "Enable junk mail and virus filtering."
2. Adjust the slider to set how tolerant the filter is of indications that an incoming message is junk mail.

   Aggressive: The junk mail filter tolerates few signs of being junk mail.

   Moderate: The junk mail filter tolerates some signs of being junk mail.

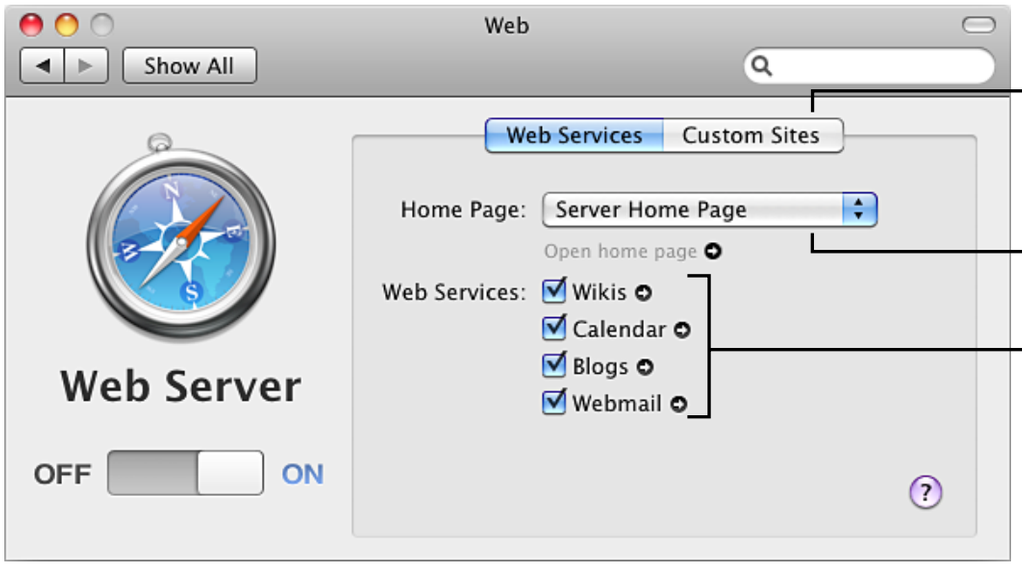
   Cautious: The junk mail filter marks an incoming message as junk mail only if it contains many signs of being junk mail.

   Mac OS X Server uses SpamAssassin (spamassassin.apache.org) to analyze the text of a message and score the probability of it being junk mail. Each message is analyzed and word frequency statistics are saved. Mail messages that contain a higher number of words found in junk mail receive a higher score for probably being junk mail. Messages suspected of being junk mail are marked ***JUNK MAIL*** and delivered. The recipient can decide if a message is really junk mail and deal with it accordingly.

   Mac OS X Server uses ClamAV (www.clamav.net) to scan mail messages for viruses. Messages suspected of containing viruses aren't delivered but are stored on the server in the /var/virusmails/ folder, and a notice is sent to the email address designated for alert messages in the Information pane of Server Preferences. The server automatically updates virus definitions daily via the Internet, and periodically deletes the mail in the /var/virusmails/ folder.

Managing Web Services

Use the Web pane of Server Preferences to turn the Web Server on or off, change the location of your server's web homepage, publish custom websites, or turn standard web services—wikis, web calendars, blogs, and webmail—on or off.



Add or delete custom websites

Choose a wiki to be the server's website, or use the default website

Make all wikis available, include web calendars in wikis, let users create blogs, and let users access email in a web browser

About Web Services

Web services can provide wikis, web calendars, blogs, web access to email, and custom websites.

If web services are on, everyone with a user account on the server gets a convenient wiki portal, called My Page, for viewing and creating wikis and blogs, using web calendars, tracking wiki updates, and accessing webmail.

All users can easily create wikis and control who can view, search, and edit their wiki content. By using included templates or creating their own, users can add, delete, edit, and format content naturally—without knowing markup codes or special syntax. With a few clicks, or by dragging and dropping, they can attach files and images, publish podcasts, assign keywords, and link to other wiki pages or other websites. They can also review the wiki's complete history of changes and revert any page to a previous version.

Web calendars let people keep track of appointments, meetings, and other events using any web browser. Users can send and receive invitations to events. When inviting people to an event, users can see each person's availability on a timeline. Each user's My Page portal includes a personal web calendar, and each wiki can also have a calendar that everyone who has access to the wiki can use. Users can create multiple calendars on their personal web calendars and on wiki group calendars that they have access to. Users with Snow Leopard can also use the iCal application to create, view, and change events that appear in web calendars.

Blogs give nontechnical users a way to keep their colleagues up-to-date with projects, files they're working on, and pictures or podcasts. Users publish their own blogs with drag-and-drop ease, using a selection of built-in professional templates.

With webmail, users can receive and send mail from a web browser anywhere on the Internet. They can access all their email as if they were using Mac OS X Mail or another mail application on their computers.

Web services also let you publish custom websites that you have created (or someone has created for you) using website development software. You can restrict access to each website to a particular group, or restrict parts of the website to particular groups. You can also specify each website's IP address, an access port, and the folder where website files are stored on the server. A custom website is also called a *virtual host*.

If you want to allow access to web services on the Internet and you have a cable router, DSL router, or other network router, your router must have port forwarding (port mapping) configured for web services. If you add custom websites that use access port numbers other than 80, configure port forwarding for those ports as well. For more information, see "Protecting a Small Network" on page 35.

If you want to allow access to web services outside your local network and your local network has a separate firewall device, ask the firewall administrator to open the firewall for the ports that web services use. If you add custom websites that use access port numbers other than 80, open the firewall for those ports as well. For a list of ports, see "Services and Ports" on page 175.

Setting Up Web Services

In Server Preferences, you can use the Web pane to change your server's web homepage and to turn standard web services on or off individually.

To configure web services:

1. In the Web pane of Server Preferences, click Web Services.
2. Use the pop-up menu to choose the homepage for your server's website.

- Choose Server Home Page to use the default Mac OS X Server website or a custom HTML website you've created (or someone has created for you) using website development software.
- Choose a wiki to make it your server's main website.

  If the pop-up menu is dimmed, the Wikis service is off.

  If the pop-up menu doesn't contain wikis, you or someone with a user account on the server needs to create a wiki.

If you see a "Create the Wiki" button instead of a pop-up menu, the site used for wikis has been deleted using Server Admin. Click the button to make wikis available.

If you see a Reveal Custom Site button instead of homepage and web services settings, a custom website has been created using the same DNS name and access port number as standard web services—wikis, web calendars, blogs, and webmail. Usually web services use the server's DNS name (shown in the Information pane of Server Preferences), and they use port 80. To make standard web services available, click the button and delete the custom website.

3 Select the services you want to use and deselect the services you don't want to use.

Wikis: Lets all server users use a web browser to view their My Page wiki portal, create wikis, and use wikis that they have permission to access. Wiki owners set access restrictions in the Settings section of their wikis.

Calendar: Adds a calendar to each user's My Page portal, and allows wiki creators to include a web calendar in each wiki.

Blogs: Lets all server users create blogs using a web browser.

Webmail: Lets all server users access their mail using a web browser.

If a service is turned on, clicking the link arrow next to it opens the website for it.

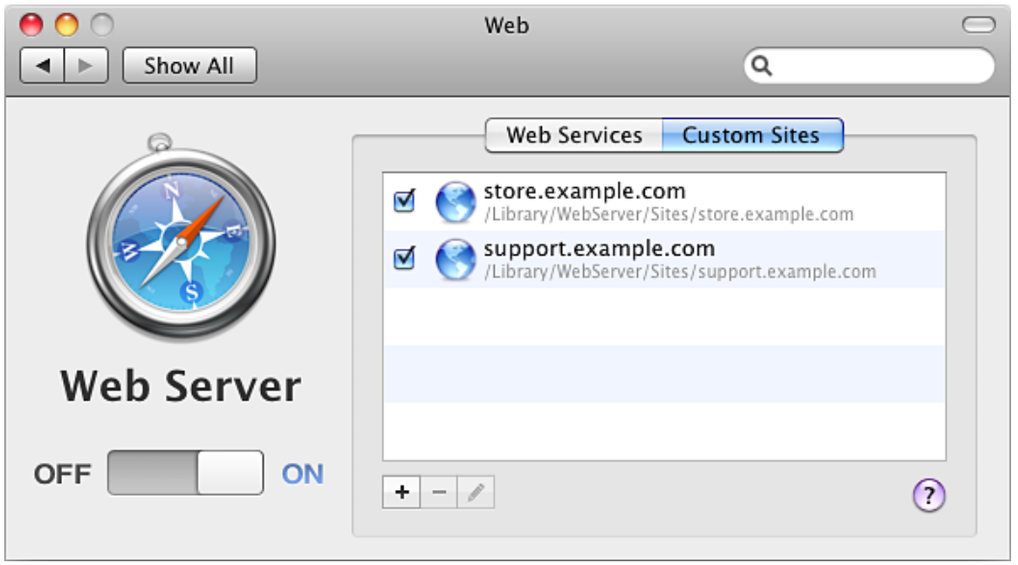
4 If web services are off, click the On/Off switch to turn them on.

If web services are off, wikis, web calendars, blogs, and webmail are unavailable.

Users can visit your server's homepage at http://*myserver.example.com* (replacing the italicized placeholder with your server's DNS name). There they can click links to see My Page, wikis, blogs, calendars, and webmail. If your server's homepage is a private wiki, visitors must log in using the name and password of a user who has permission to see the wiki.

Publishing Custom Websites

Besides setting up wikis, you can have your server publish custom websites consisting of static HTML files. You create a custom website using web development software of your choice, or have someone do it for you, and copy the website files to your server. Each custom website is also called a *virtual host*.



To publish a custom website:

1. In the Web pane of Server Preferences, click Custom Sites.
2. To add a new website, click the Add (+) button, and then enter the website's fully qualified DNS name and optionally choose the folder where the website files are stored on the server.

   Server Preferences creates a website for the DNS name you enter if it isn't already in use and your DNS service can resolve it to your server's IP address.

   - If you enter a DNS name that's already being used for standard web services—wikis, web calendar, blogs, or webmail—you can change the DNS name or specify a nonstandard access port number. The standard access port for websites is 80. Before specifying a different port, make sure it doesn't conflict with another service provided by your server. For a list of ports Mac OS X Server may use, open Server Admin (in /Applications/Server/) and use the Help menu to search for "TCP and UDP port reference."
   - If the status indicator to the right of the DNS name is red, Server Preferences can't resolve the DNS name to your server's IP address. To fix this, you can change the DNS name or click Create anyway and manually set the IP address.

   If you don't choose a folder for the website files, Server Preferences creates one for you in the default location, /Library/WebServer/Sites/*domainname* (where *domainname* is the DNS name you entered.)
3. Copy the files you want available on the website to the website folder, removing placeholder files you don't need.

   Make sure your website's homepage is named index.html or index.php.

The location of the website folder is shown below the website name in the Custom Sites pane of the Web pane.

4 Make sure the checkbox next to the website is selected and that web services are on.

If a website's checkbox is deselected, the website is unavailable.

If web services are off, all custom websites are unavailable.

After adding files and folders to the website folder, you can restrict access to all or part of a website. For instructions, see "Restricting Access to a Custom Website" on page 144.

Restricting Access to a Custom Website

You can restrict access to each custom website or to folders within the site folder. You can restrict access to one group that can view the entire website, or restrict access to individual folders in the website folder. Website folders with restricted access are called *realms*.

To control website access:

1 In the Web pane of Server Preferences, click Custom Sites.

2 Select a website in the list, note its folder location, and click the Edit (pencil) button.

3 To designate one group that can access the entire website, choose the group from the Who Can View This Site pop-up menu.

4 To designate groups that can access folders within the website, choose Customize from the Who Can View This Site pop-up menu.

You can only control access to folders that exist. You can use the Finder to add folders to the website folder, whose location you noted in step 2.

Managing VPN Service

Use the VPN pane to turn VPN remote access service on or off, inspect or change the VPN secret, set the IP address range for VPN users, or save a VPN configuration file for Mac OS X users.

About VPN Service

VPN (virtual private network) service lets users connect to your network from home or other remote locations over the Internet. Users make a secure VPN connection to access services such as file sharing, address book, mail, iChat, iCal, and web.

To ensure confidentiality, authentication, and communications integrity, VPN service uses the L2TP protocol with a shared secret.

A secure shared secret is generated automatically when you set up your server. The shared secret isn't used to authenticate client computer users for a VPN connection. Instead, it allows the server to trust client computers that have the shared secret, and it allows client computers to trust the server that has the secret.

Both server and client computers must have the shared secret. A computer with Mac OS X v10.6 Snow Leopard can automatically get the shared secret and be set up to make connections to the server's VPN service. See "Setting Up Users' Macs Automatically" on page 105.

Other Mac and Windows computers can be configured in different ways to connect to the VPN service. See "Setting Up a Mac User's VPN Connection" on page 115 and "Setting Up a User's VPN Connection Manually" on page 117.

VPN service and your server's firewall can both allow access to services from outside your local network. The difference is that VPN service requires authentication for access, but allowing access through the firewall doesn't require authentication. If VPN service is on, you may not need some services exposed to the Internet through your firewall. For example, you might set the firewall to expose only your web services to the Internet so that the public can view your wikis and custom websites (subject to authentication and access restrictions you impose). Your server's users can access other services—file sharing, Address Book, iCal, iChat, and mail—through a VPN connection.

If you want to allow access to VPN service on the Internet and you have a cable router, DSL router, or other network router:

- Your router must have port forwarding (port mapping) configured for VPN service. For more information, see "Protecting a Small Network" on page 35.
- Your router and VPN users' routers must be configured so that they don't assign conflicting IP addresses. For more information, see "Providing VPN Service Through an Internet Router" on page 150.

If you want to allow access to VPN service outside your local network and your local network has a separate firewall device, ask the firewall administrator to open the firewall for the ports and protocols that VPN service uses. For a list of ports, see "Services and Ports" on page 175.

Changing the VPN Shared Secret

You can use Server Preferences to change the shared secret that the server and a client computer use for authentication when making a VPN connection. Periodically changing the shared secret improves VPN security, but is inconvenient because users must also change the shared secret on computers they use for VPN connections.

To change the VPN shared secret:

1. In the VPN pane of Server Preferences, click Edit.
2. Select "Show shared secret" so you can read the secret, and then enter a new secret and click OK.

   The shared secret should be at least 8 characters (preferably 12 or more) including letters, digits, and symbols, but without spaces. Initially, the shared secret is 32 random characters.

   You can use Password Assistant to help you compose a new shared secret. Temporarily switch to the Users pane, click Account, click Reset Password, click the Key button to the right of the New Password field, and then click Cancel and return to the VPN pane. Password Assistant remains open, and you can use it to generate a new shared secret that you copy from the Suggestion field and paste into the Shared Secret field.

After you change the secret here, all VPN users must make the same change in their VPN configurations. For information about making this change, see "Setting Up a User's VPN Connection Manually" on page 117.

Creating a VPN Configuration File

You can use Server Preferences to generate a file that Mac users can open to create a VPN configuration automatically. After creating the VPN configuration, a user can make a VPN connection to the server and its network via the Internet. The configuration file works with Mac OS X v10.3 or later.

To generate a VPN configuration file:

1. In the VPN pane of Server Preferences, click Save As, select a location for the VPN configuration file, and click Save.
2. Distribute the saved configuration file to users who need to set up a VPN configuration on their Macs.

To set up a Mac, a user simply opens the VPN configuration file you generated. Opening this file opens either the Network pane of System Preferences or Internet Connect (depending on the Mac OS X version), and then imports a VPN configuration with all information necessary to make a VPN connection except the name and password of a user account on the server. If Internet Connect asks the user where to put the imported configuration, the user should select VPN (L2TP). The user should not select VPN (PPTP) or any other option.

When Network preferences or Internet Connect finishes importing the VPN configuration, the user must enter an account name and may enter a password, and whatever the user enters is saved as part of the VPN configuration upon quitting the application. If the user saves both the name and password as part of the VPN configuration, anyone using that computer will then be able to log in automatically for a VPN connection to your server.

For security, you can instruct users to enter their account name but leave the password blank, and then quit the application (System Preferences or Internet Connect). If users don't save a password as part of the VPN configuration on their computers, they will be asked to log in each time they make a VPN connection to your server.

For information you can give users instructing them how to use the VPN configuration file, see "Setting Up a Mac User's VPN Connection" on page 115.

Changing the IP Address Range for VPN

You can use Server Preferences to change the range of addresses you want the server to reserve for assigning to remote computers when they make a VPN connection to the server. For example, you might make the range larger to make more IP addresses available for VPN connections.

Important: These are addresses on the server's network, and they must not be used by other computers or devices on the network. This range of addresses must not include any static IP addresses in use on the network and must not overlap the range of IP addresses that the DHCP server assigns.

To change the IP address range for VPN service:

1. In the VPN pane of Server Preferences, change the first IP address in the range, the last IP address in the range, or both.

   The range of addresses needs to be large enough for the maximum number of remote computers that will have concurrent VPN connections. VPN service assigns an IP address to a remote computer for the duration of a VPN connection, and reclaims the address when the remote computer disconnects.

2. If you have an AirPort Base Station or other Internet router (gateway) that provides DHCP service, you may need to adjust its IP address range so that the DHCP and VPN address ranges don't overlap.

   To configure an AirPort Base Station, use AirPort Utility (in /Applications/Utilities/). For information about changing the settings of an Internet router, see its documentation.

   The IP address that VPN service assigns to a remote computer for its VPN connection doesn't replace the IP address that the remote computer is already using to connect to the Internet. The remote computer keeps this IP address and any other IP addresses it's using, and adds the IP address assigned to it for VPN.

Providing VPN Service Through an Internet Router

If your server provides VPN service through an AirPort Extreme Base Station, a Time Capsule, or a network router configured to share an Internet connection, and users' computers need to make VPN connections through their own base stations or home routers, your server must be on a different IP subnet than the VPN users' home computers. To avoid this conflict, make sure your server's IP address doesn't begin with the same three numbers—such as 10.0.1 or 192.168.1—as IP addresses on VPN users' home networks.

By asking users to change their network addresses:

- You can ask VPN users to change the IP addresses on their home networks or other local networks to not begin with the same three numbers as the IP addresses on your local network.

  For example, if your local IP addresses begin with 192.168.1, ask VPN users to use IP addresses beginning with 192.168.2 on their home networks. Private networks can use addresses beginning with 192.168.0 through 192.168.254, 10.0.0 through 10.254.254, 172.16.0 through 172.31.254. In all cases, use subnet mask 255.255.255.0.

By changing your local network addresses:

Instead of asking VPN users to change their home network addresses, you can change the IP address of all the devices on your server's local network. This includes your AirPort Base Station or other router, server, and other computers.

- Change your local IP addresses so your IP subnet is different from the most common defaults on base stations and other routers: 10.0.1, 192.168.0, and 192.168.1.

  You can simply pick a different number between 2 and 254 for the third number of your local IP addresses. For example, if your local network IP addresses begin with 192.168.1, change them to begin with 192.168.58 or 192.168.177. If your local IP addresses begin with 10.0.1, change them to begin with 10.0.29 or 10.0.103. You can also use 172.16.0 through 172.31.255. In all cases, use subnet mask 255.255.255.0.

  Be sure to change the IP addresses that your AirPort Base Station, other Internet router, or DHCP server assigns to computers on your network. You make these changes on an AirPort Base Station using AirPort Utility (located in /Applications/Utilities/). For instructions, open AirPort Utility and then use the Help menu. For information about configuring another kind of Internet router or gateway, see its documentation.

For information about changing your server's IP address, see "Changing Your Server's IP Address" on page 157.

Customizing Services Using Advanced Applications

It's easy to customize basic service settings with Server Preferences, but you can also use Server Admin and the other advanced applications and tools listed in "Advanced Tools and Applications" on page 27. You can use the advanced applications and tools to customize many additional service settings. You can also turn on services that aren't shown in Server Preferences, such as Podcast Producer and QuickTime Streaming Server. For information about advanced services, options, and applications, open Server Admin and then use the Help menu, or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/.

Important: Before using Server Admin or other advanced application to change service settings that you normally manage with Server Preferences, carefully note the current settings in the advanced application in case you need to revert to them. For example, you can save a screen shot of each pane and dialog before changing settings in it. (For information about taking screen shots, switch to the Finder and then use the Help menu.)

Managing Server Information

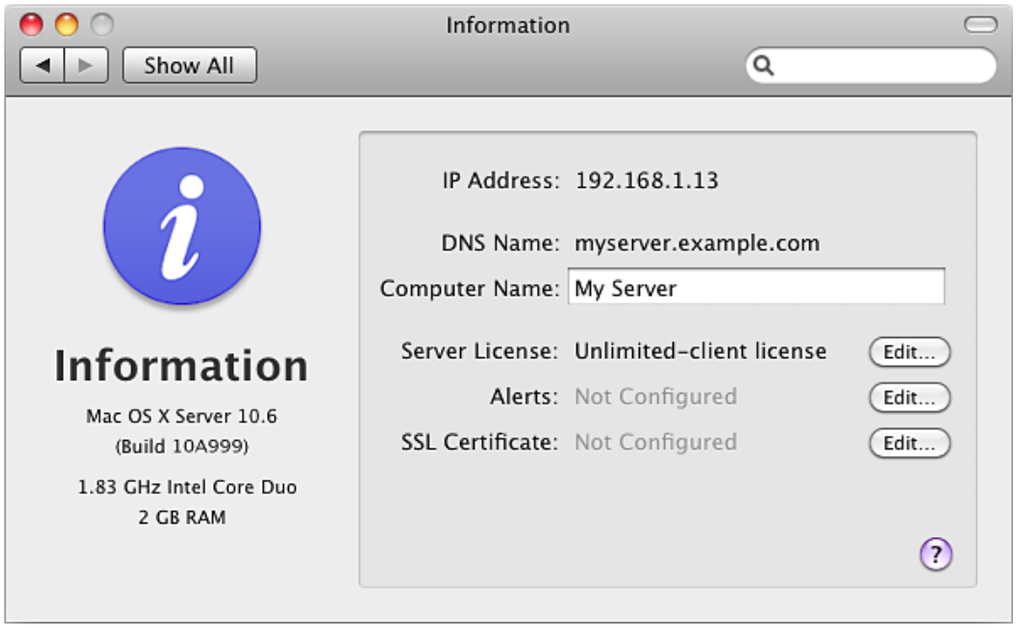
10

Use Server Preferences to get general information, manage SSL certificates, check service logs, see graphs of server activity, set up storage for users' Time Machine backups, and change security settings.

The System section of Server Preferences includes the Information, Logs, Graphs, Time Machine, and Security panes.

Managing Server Information

Use the Information pane of Server Preferences to get information about your server, including the hardware and software installed, network names and address, and serial number. You can also change the server's computer name and serial number, manage email alerts, and manage SSL certificates.



You can see and change other network information in the Network pane of System Preferences on the server. For information about changing Network preferences, open System Preferences and then use the Help menu.

You can get additional information about the server by using Apple System Profiler (located in /Applications/Utilities/). For information about using System Profiler, open it and then use the Help menu.

Changing the Serial Number or Site License Details

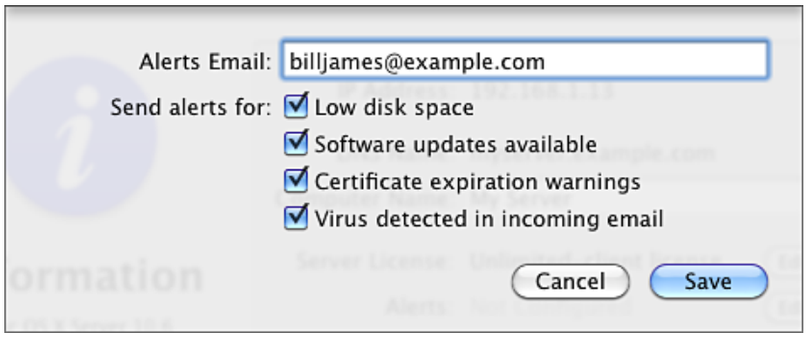
You can use Server Preferences to change the Mac OS X Server software serial number or site license information.

To change the software serial number or site license information:

1. In the Information pane of Server Preferences, click the Edit button next to the Server License information.
2. Enter a different serial number or edit the site license details as needed, and then click Save.

Changing Alert Settings

You can use Server Preferences to change the email address to which the server sends warning messages about low disk space, software updates, expiring SSL certificates, and email suspected of having a virus. You can also turn each type of alert on or off.



To change the notification email address:

1. In the Information pane of Server Preferences, click the Edit button on the Alerts line.
2. Enter the desired email address in the Alerts Email field.

   If you don't want any alerts sent, leave the Alerts Email field blank.
3. Select the types of alerts you want the server to send, and then click Save.

Low disk space: Sends an email when a disk or partition has less than 5 percent free space available.

Software updates available: Sends an email when new software updates become available for the server.

Certificate expiration warnings: Sends an email when an SSL certificate is about to expire.

Virus detected in incoming email: Sends an email when the email virus filter detects a virus.

Changing Your Server's Name

You can use Server Preferences to change the server's computer name. This name identifies the server to users who are browsing for network file servers or other network resources identified by computer name rather than by DNS name.

To change your server's computer name:

- In the Information pane of Server Preferences, edit the Computer Name field.

  Specify a name that's 63 Roman characters or fewer, including spaces. Avoid using =, :, or @. (If a user's computer connects to the server using the SMB file sharing protocol, Mac OS X Server automatically converts the computer name to a form that's valid with SMB.)

To change the server's local hostname, use the Sharing pane of System Preferences on the server. Other computers on the server's local network (IP subnet) can use the server's local hostname to contact the server. If you change your server's local hostname, users of other computers might need to change their bookmarks or other settings to use the server's new local hostname. For information about using System Preferences, open it and use the Help menu.

Changing Your Server's IP Address

The server's IP address is one of the network connection settings in the Network pane of System Preferences on the server. For information about changing the IP address in Network preferences, open System Preferences on the server and use the Help menu.

If your server's network connection is configured using DHCP, the server should have a static IP address (the same IP address all the time) assigned by your DHCP server. To change your server's IP address in this case, the DHCP server must be reconfigured. If you have an AirPort Base Station or other router that provides DHCP service, you change your server's IP address by reconfiguring the *DHCP reservations* or *static mapping* feature.

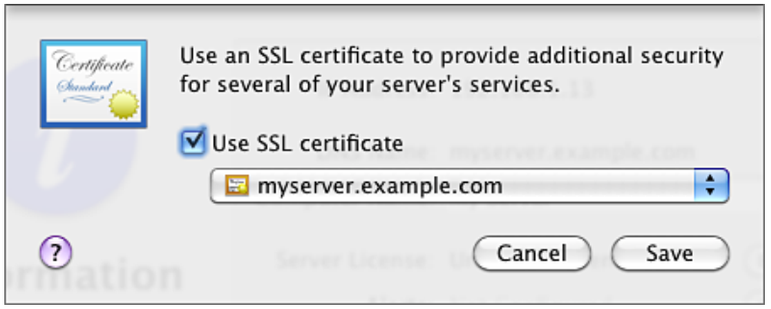
Important: After changing the server's IP address, the DNS server for your network must be updated so that your server's DNS name points to the new IP address. Also, a reverse lookup of the new IP address must point to your server's DNS name.

If your server provides its own DNS service, you can use Server Admin to update it. If your DNS service is provided by your ISP or another server on your network, ask your ISP or the DNS server administrator to update your server's DNS records.

Changing your server's IP address may disrupt the connections of users' computers that have Mac OS X v10.6 Snow Leopard. If this happens, users need to remove the server from their list of directory servers and then add it back. For more information, see "Setting Up a Mac by Using Accounts Preferences" on page 112.

Using an SSL Certificate

The server can use an SSL certificate to identify itself electronically and communicate securely with users' computers and other servers on the local network and the Internet. The SSL certificate provides additional security for address book, iCal, iChat, mail, and web services. These services can use the certificate to securely encrypt and decrypt data they send to and receive from applications on users' computers.



To use an SSL certificate:

1. In the Information pane of Server Preferences, click the Edit button to the right of SSL Certificate.
2. Select "Use SSL certificate" and then choose an available certificate from the top part of the pop-up menu.

   If the pop-up menu doesn't contain any certificates, you can create a self-signed certificate. For instructions, search Server Preferences Help for "self-signed certificate."

   If you want to use a previously generated SSL certificate, you can import it. For instructions, search Server Preferences Help for "importing a certificate."

   You can use the self-signed certificate created for your server when you set it up, or a self-signed certificate you created, but users' applications won't automatically trust either of these and will display messages asking if the user trusts your certificate. Using a *signed* certificate relieves users from the uncertainty and tedium of manually accepting your certificate in these messages. In addition, a man-in-the-middle spoofing attack is possible with a self-signed certificate, but not with a signed certificate, and that means users can trust the services they are accessing. See "Obtaining a Signed Certificate" on page 159 and "Replacing a Self-Signed Certificate" on page 161.

Obtaining a Signed Certificate

You can use a self-signed certificate to obtain a signed certificate from a known certificate authority. A self-signed certificate usually isn't trusted automatically, but a signed certificate usually is. Services that can use SSL certificates need a trusted certificate to securely communicate with users' applications and other servers.

To obtain a valid signed certificate, you use a self-signed certificate to generate a certificate signing request (CSR) file, which you send to a certificate authority. If your request satisfies the authority, it makes a signed certificate and sends it to you.

To obtain a signed certificate:

1. In the Information pane of Server Preferences, click the Edit button to the right of SSL Certificate.
2. Choose the self-signed certificate you want to use from the pop-up menu.

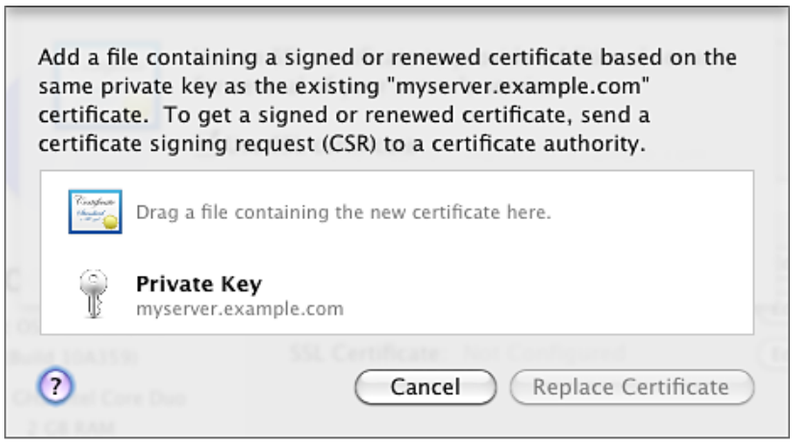
   "Use SSL certificate" must be selected to make the pop-up menu available.
3. Choose Certificate Signing > Generate Certificate Signing Request from the pop-up menu, click Save, and choose a location to save the certificate signing request (CSR) file.
4. Send the CSR to a certificate authority.

   Typically, you need to open the CSR file using TextEdit, copy the entire contents, and paste into a form on the certificate authority's website. Contact the certificate authority you want to use to determine how to send your CSR. For information about certificate authorities, search the web.

When you receive your SSL certificate from the certificate authority, you can use it to replace your self-signed certificate. For instructions, see "Replacing a Self-Signed Certificate," next.

Replacing a Self-Signed Certificate

After you receive a signed certificate from a certificate authority, you can use it to replace your self-signed certificate.



To replace a self-signed certificate:

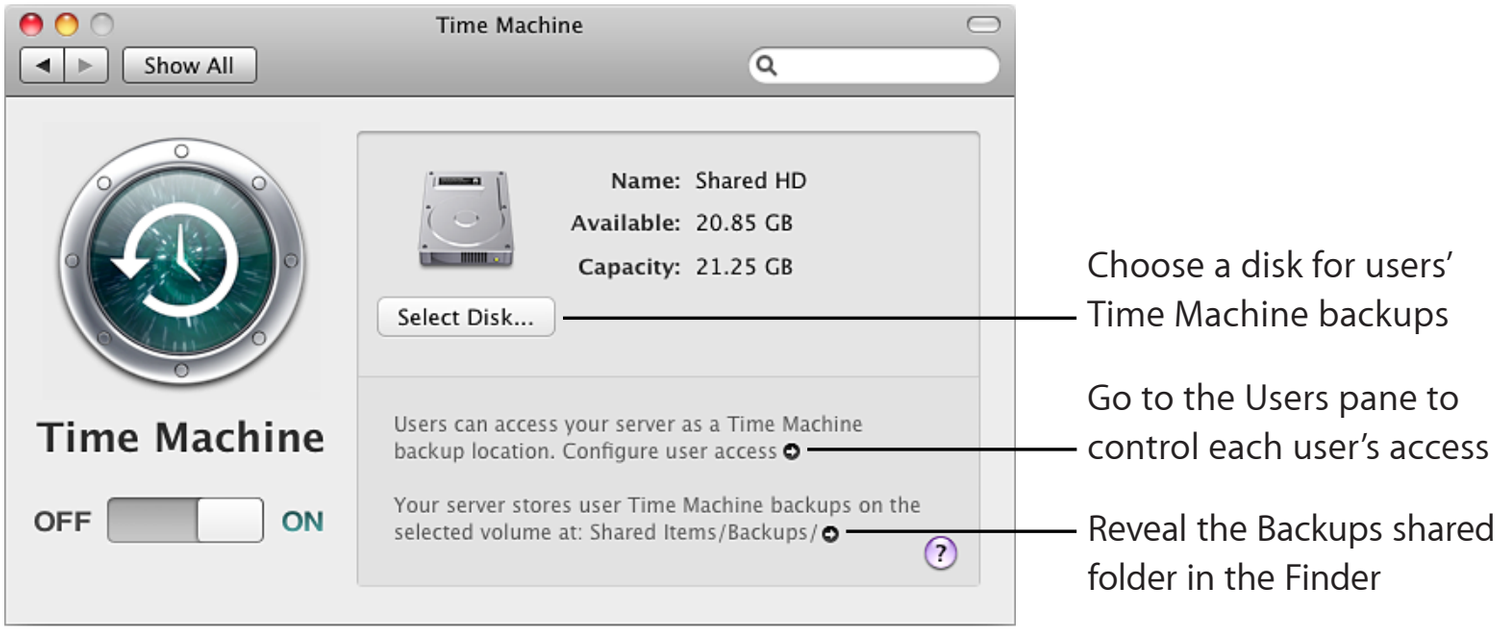
1. In the Finder, locate the signed certificate file you received from a certificate authority, and put the file somewhere you'll be able to see it, such as on the desktop, while using Server Preferences.
2. In the Information pane of Server Preferences, click the Edit button to the right of SSL Certificate.
3. Choose the self-signed certificate you want to replace from the pop-up menu.

   "Use SSL certificate" must be selected to make the pop-up menu available.
4. Choose Certificate Signing > "Replace With Signed or Renewed Certificate" from the pop-up menu.

5 Drag the file containing the signed certificate to the middle of the dialog in Server Preferences, and then click Replace Certificate.

Managing Users' Backup Storage

Snow Leopard Server offers the security and convenience of Time Machine backup to users with Mac OS X v10.6 Snow Leopard or Mac OS X v10.5 Leopard who need backup storage. Snow Leopard users who haven't selected a backup disk in the Time Machine pane of System Preferences will be automatically asked if they want to use the server as a storage location. Other users will need to open the Time Machine pane of System Preferences and change the disk used for storing backups.



Use the Time Machine pane of Server Preferences to make server disk space available for backing up users' computers or to change the disk used for storing user backups.

If you change the backup disk, users' Time Machine preferences that were set to use the server for backup storage will automatically begin using the Backups folder in its new location. However, Mac OS X Server doesn't copy users' backup data from the old Backups folder to the new Backups folder. After selecting a different backup disk, you should advise users that their first backup will take longer because it's a full backup.

For information about server backup, see "Backing Up and Restoring the Server" on page 78.

Changing Security Settings

Use the Security pane of Server Preferences to protect your server from users on other networks or the Internet.

You can set up a firewall to protect your local network (IP subnet), or you can manage an AirPort Extreme Base Station (802.11n) or a Time Capsule to protect your local network. Either way, you can individually specify which services will accept incoming connections from computers outside your server's local network (IP subnet). If you use firewall security (not AirPort management), you can allow incoming connections to all services from outside your server's local network.

If the Security pane says you're using the application firewall, you can manage it in System Preferences, or you can turn it off there and manage the server's firewall in Server Preferences. For more information, see "About Firewall Security," next.

If your server gets its Internet connection through a network router other than an AirPort Extreme Base Station or Time Capsule, you can use the router's configuration software to protect your server and your local network. If you do that, you can turn off firewall security in the Security pane. For information about configuring your router, see "Protecting Your Network with a Router" on page 36.

To control which services are exposed to the Internet:

1 If you have an AirPort Extreme Base Station or a Time Capsule, and you see a "Switch to AirPort management" button in the Security pane, click the button to use the AirPort Extreme Base Station or Time Capsule for security control.

If you're asked to authenticate, enter the base station or Time Capsule password (not the wireless network password).

If you've changed the NAT options on your AirPort Extreme Base Station or Time Capsule to use your server as the "default host," you need to use the server's firewall to control security, not the AirPort management. In this case, do *not* click "Switch to AirPort management" in the Security pane. By default, an AirPort Extreme Base Station or Time Capsule has the default host option turned off.

If you see a "Switch to Firewall security" button in the Security pane, don't click the button if you're using the default NAT options on your AirPort Extreme Base Station or Time Capsule. Click this button only if you've changed the "default host" option in the NAT pane of the AirPort Utility application.

2. In the Security pane of Server Preferences, click the On/Off switch to turn on security control.

3. To allow a service to accept incoming connections from all networks, including the Internet, click the Add (+) button and choose the service from the pop-up menu.

   If the service you want to add isn't listed in the pop-up menu, choose Other, and then enter the service name and port. For a list of service names and ports, open Server Admin and then use the Help menu to search for "TCP and UDP port reference."

4. To stop a listed service from accepting incoming connections from all networks including the Internet, select the service and click the Delete (–) button.

   While security control is on, services that aren't listed in the Security pane can get incoming connections only from the server's local network.

   If you you're using AirPort management and make changes in the Security pane, Server Preferences asks if you want to apply your changes by restarting your base station or Time Capsule. Restarting will interrupt Internet access and DHCP service for all computers on your local network for up to a minute.

If you turn on firewall security and your server gets its Internet connection through a network router, you should configure your router to send all incoming requests for services to your server. For instructions, open Server Preferences Help and search for "making your server the router default host."

To allow all incoming requests for services with firewall security:

- In the Security pane, click the On/Off switch to turn off firewall security.

While firewall security is off, your server's firewall allows incoming connections to all services. However, if your server gets its Internet connection through a cable router, DSL router, or other router, you also need to configure it to send incoming service requests to your server. For information about configuring your router, see "Protecting Your Network with a Router" on page 36.

If you're using AirPort management (not firewall security), turning it off blocks incoming connections to all services.

About Firewall Security

The firewall that you can control in the Security pane of Server Preferences is the Mac OS X Server firewall. Called an *IP firewall,* it accepts or denies incoming and outgoing traffic based on attributes of the traffic, such as its destination port or originating IP address. For information about the IP firewall, open Server Admin and then use the Help menu to search for "firewall service overview."

Your server also has the Mac OS X firewall, which works differently. It's known as an *application firewall* because it accepts or denies an incoming connection based on the particular application, service, or other software module that's trying to accept the connection. This firewall doesn't control outgoing network traffic. You manage the application firewall with System Preferences, not Server Preferences.

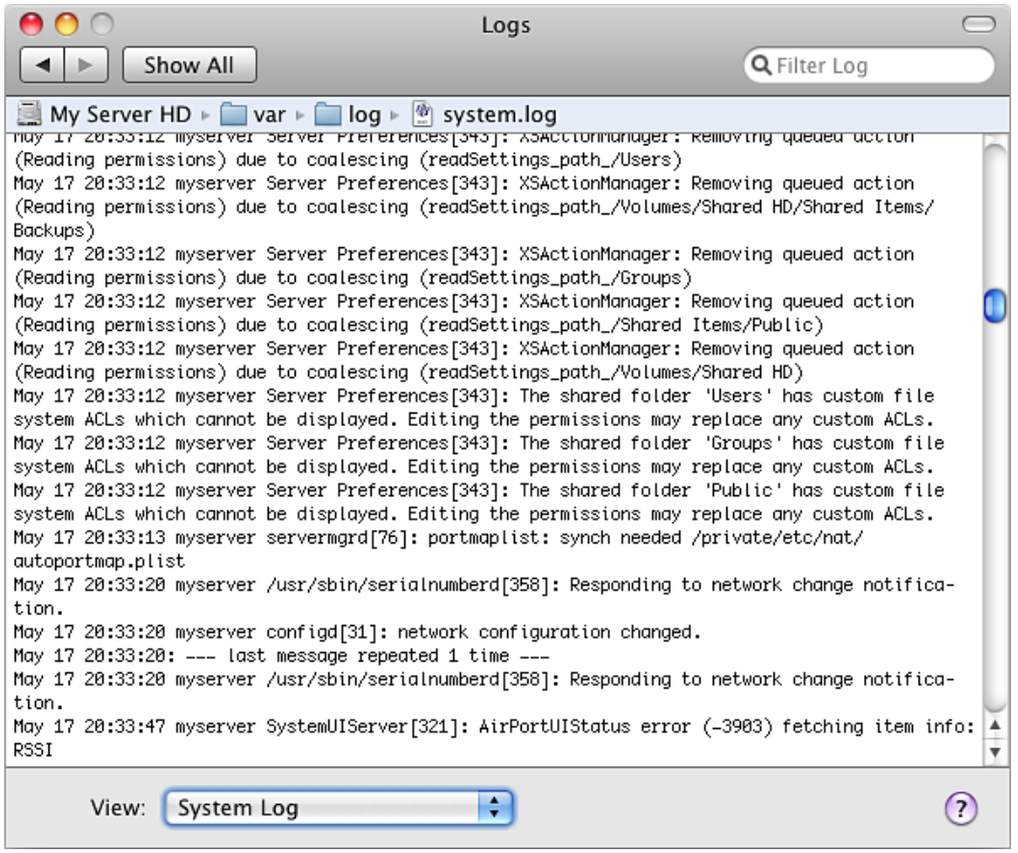
If you upgraded your server from Mac OS X Server v10.5 Leopard, the application firewall may be active. You need to turn it off in the Security pane of System Preferences before you can manage the IP firewall with the Security pane of Server Preferences.

Your server's firewall and VPN service can both allow access to services from outside your local network. The difference is that VPN service requires authentication for access, but access allowed through the firewall doesn't require authentication. If VPN service is on, you may not need to expose some services to the Internet through your firewall. For example, you might set the firewall to expose only your web services to the Internet so that the public can view your website. Your server's users can access other services—file sharing, address book, iCal, iChat, and mail—through a VPN connection.

Checking Server Logs

Use the Logs pane of Server Preferences to view the logs kept by the Mac OS X Server software components as they provide services. These logs include the messages you see in alert dialogs, plus messages you won't see anywhere else about routine actions, warnings, and errors. If you've received an error message in a dialog, a log may show additional detail about the issue.

Log messages are rather technical and not very meaningful to the average user, but they can help support technicians solve problems.



Here are ways you can use the Logs pane:

- Choose a log from the View pop-up menu.

  The log's filename and its location on the server are shown above the contents of the log.

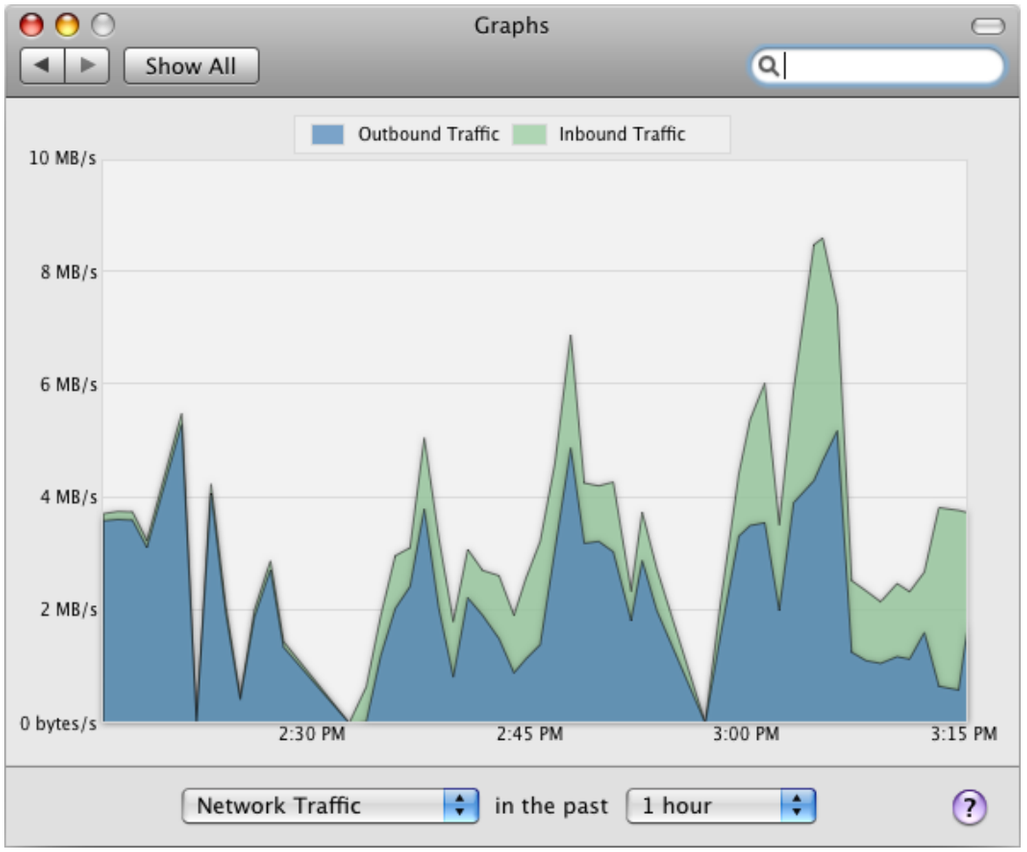
- Show only log entries that contain a word or phrase, by typing it in the Filter field at the top of the window.

- Show all entries for the selected log, by deleting the contents of the Filter field or clicking the X button in the field.

You can also view Mac OS X Server logs and other logs using the Console application (located in /Applications/Utilities/) on the server. For example, you can use Console to view the console.log file, which contains important messages from applications that are open on the server. For information about using Console, open it and then use the Help menu.

Monitoring Server Graphs

Use the Graphs pane of Server Preferences to get a picture of server activity over time. You can find out when the server is likely to be busy, whether it's operating near capacity, and when it's likely to be least used.



Here are ways you can use the Graphs pane:

- Choose a type of activity and a time period from the pop-up menus.

  Processor Usage: Monitor the workload of the server's processor or processors (also called the *central processing unit,* or CPU).

  Network Traffic: Track how much incoming and outgoing data the server transfers over the network.

  Disk Space: See how much space is used and how much is available on each mounted disk or volume (partition).

  File Sharing Traffic: Track how much incoming and outgoing data the file sharing services transfer over the network.

  Web Traffic: Track how much incoming and outgoing data the web services transfer over the network.

  You can also monitor server activity using the Server Status widget on the server or on another computer on the network. For information, see "Using the Server Status Widget" on page 75.

  If the server has a display, you can use Activity Monitor (located in /Applications/Utilities/) on the server. Activity Monitor shows the processes and applications that are currently open on the computer. You can also use Activity Monitor to monitor short-term processor workload, disk activity, and network activity. For information about using Activity Monitor, open it and then use the Help menu.

Learning More

11

More information about using Mac OS X Server is available from onscreen help and the web.

Using Onscreen Help

You can get task instructions in the onscreen help system while you're managing Mac OS X Server. You can view help on a server or an administrator computer. (An administrator computer is a Mac OS X computer with Mac OS X Server administration software installed on it. For information, see "Preparing an Administrator Computer" on page 51.)

To get help with a server administration application:

- Open Server Preferences, Server Admin, Workgroup Manager, or another application located in /Applications/Server/ and then:
  - To get information about options in a pane or dialog with a help button, click the help button.
  - To browse and search help topics, choose the application's help from the Help menu.

    For example, choose Help > Server Preferences Help while you're using Server Preferences.

- To search for a task you want to perform, use the search field at the top of the Help menu.

Server Preferences Help contains all the instructions from this book for managing a server that has its own users and groups or is configured to import users. Server Preferences Help contains additional topics that focus more narrowly than the book on specialized tasks.

For more information about server administration applications, open Server Admin and then use the Help menu to search for "tools and applications," or see the Mac OS X Server Resources website at www.apple.com/server/macosx/resources/.

To see the most current server help topics:

- Make sure the server or administrator computer is connected to the Internet while you're getting help.

Help Viewer automatically retrieves and caches the most current server help topics from the Internet. When not connected to the Internet, Help Viewer displays cached help topics.

Getting Documentation Updates

Periodically, Apple posts revised help pages and new editions of manuals. Some revised help pages may update this manual.

- To view new onscreen help topics for a server application, make sure your server or administrator computer is connected to the Internet and click "Latest help topics" or "Staying current" in the main help page for the application.

- To download the latest edition of *Getting Started* in PDF format, go to the Mac OS X Server Resources website:

  www.apple.com/server/macosx/resources/

- To view an RSS feed listing the latest updates to *Getting Started* and Mac OS X Server onscreen help, use an RSS reader application such as Safari or Mail and go to:

  feed://helposx.apple.com/rss/snowleopard/serverdocupdates.xml

Getting Additional Information

For more information, consult these resources
Read Me documents (on the *Mac OS X Server Install Disc* and the *Administration Tools* disc) Get important updates and special information.
Mac OS X Server website (www.apple.com/server/macosx/) Enter the gateway to extensive product and technology information.
Mac OS X Server Support website (www.apple.com/support/macosxserver/) Access hundreds of articles from Apple's support organization.
Apple Training and Certification website (www.apple.com/training/) Hone your server administration skills with instructor-led or self-paced training, and differentiate yourself with certification.
Apple Discussions website (discussions.apple.com) Share questions, knowledge, and advice with other administrators.
Apple Mailing Lists website (www.lists.apple.com) Subscribe to mailing lists so you can communicate with other administrators using email.

Services and Ports

If your server connects to the Internet through a cable router, DSL router, or other network router, you can configure port forwarding (port mapping) to allow access to some services from the Internet while protecting other services and other computers on your network.

Use the following table to determine the port numbers for the services that you want to expose on the Internet. Configure your router to forward only those ports to your server's IP address.

Some Internet routers may ask you to specify TCP or UDP for each port, while other routers don't. For specific information about how to configure port forwarding on your router, see its documentation.

If your local network has a separate firewall device and you want to allow access to some services outside your local network, ask the firewall administrator to open the firewall for the communications ports and protocols that your services use. Use the following table to determine the port numbers you need to have opened on the firewall.

Service	Port	TCP or UDP
Address Book Server	8800	TCP
Address Book Server SSL	8843	TCP
iCal Server	8008	TCP
iCal Server SSL	8443	TCP
iChat Server	5222	TCP
iChat Server SSL	5223	TCP
iChat server-to-server	5269	TCP
iChat Server file transfer	7777	TCP
iChat local	5678	UDP
iChat audio/video RTP and RTCP	16384–16403	UDP
File sharing SMB	139	TCP
File sharing AFP	548	TCP
Mail service SMTP standard	25	TCP
Mail service POP3	110	TCP
Mail service IMAP	143	TCP
Mail service SMTP submission	587	TCP
Mail clients IMAP SSL	993	TCP
Mail clients POP3 SSL	995	TCP
Remote login SSH (secure shell)	22	TCP
Screen sharing VNC	5900	TCP

Service	Port	TCP or UDP
Web service HTTP	80	TCP
Web service HTTPS	443	TCP
Web service custom website	*YourPortNumber*	TCP
VPN L2TP ISAKMP/IKE	500	UDP
VPN L2TP	1701	UDP
VPN L2TP IKE NAT Traversal	4500	UDP
VPN L2TP ESP (firewall only)	IP protocol 50	n/a
VPN PPTP	1723	TCP

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